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SESSIONAL PAPERS

VOLUME 15

FIRST SESSION OF THE ELEVENTH PARLIAMENT

OF THE

DOMINION OF CANADA

SESSION 1909

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VOLUME XLIII

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(This volume is bound in two parts.)

1. Report of the Auditor General for the year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson; also 19th February, 1909, by Hon. W. S. Fielding; also 23rd February, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers

CONTENTS OF VOLUME 2.

2. Public Accounts of Canada, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson..*Printed for both distribution and sessional papers.*

3. Estimates of the sums required for the services of Canada for the year ending 31st March, 1910. Presented 1st February, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

4. Estimates of the sums required for the services of Canada for the year ending on the 31st March, 1909. Presented 15th March, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

4*a*. Further Supplementary Estimates of sums required for the service of Canada for the fiscal year ending 31st March, 1909. Presented 10th May, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

5. Supplementary Estimates of sums required for the service of Canada, for the fiscal year ending on 31st March, 1910. Presented 10th May, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

5*a*. Further Supplementary Estimates of sums required for the service of Canada, for the year ending on 31st March, 1910. Presented 18th May, 1909, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

6. List of Shareholders in the Chartered Banks of Canada, as on 31st December, 1908. Presented 13th May, 1909, by Hon. F. Oliver.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 3.

7. Report of dividends remaining unpaid, unclaimed balances and unpaid drafts and bills of exchange in Chartered Banks of Canada, for five years and upwards, prior to 31st December, 1908.. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 4.

8. Report of the Superintendent of Insurance for the year ended 31st December, 1908.
Printed for both distribution and sessional papers.

9. Abstract of Statements of Insurance Companies in Canada, for the year ended 31st December, 1908... .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 5.

10. Report of the Department of Trade and Commerce, for the fiscal year ended 31st March, 1909. Part I.—Canadian Trade. Presented 27th January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

10*a*. Report of the Department of Trade and Commerce, Part II, Trade of Foreign Countries and Treaties and Conventions, for the fiscal year ended 31st March, 1908. Presented 5th April, 1909, by Sir Wilfrid Laurier.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 6.

10*b*. Report of the Department of Trade and Commerce, Part III, Subsidized Steamship Service, &c., for the year ended 31st March, 1908. Presented 22nd March, 1909, by Sir Wilfrid Laurier.. .. ..*Printed for both distribution and sessional papers.*

11. Tables of the Trade and Navigation of Canada, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 7.

12. Inland Revenues of Canada. Excise, &c., for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

13. Inspection of Weights, Measures, Gas and Electric Light, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

14. Report on Adulteration of Food, for the fiscal year ended 31st March, 1908. Presented 11th March, 1909, by Hon. W. Templeman.
Printed for both distribution and sessional papers.

15. Report of the Minister of Agriculture, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.

15*a*. Report of the Dairy and Cold Storage Commissioner, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. S. A. Fisher.

Printed for both distribution and sessional papers.

15*a*. (2) Report of the Veterinary Director General and Live Stock Commissioner, for two years ended 31st March, 1908... ..*Printed for both distribution and sessional papers*

CONTENTS OF VOLUME 8.

16. Report of the Directors and Officers of the Experimental Farms for the year ended 31st March, 1908. Presented 31st March, 1909, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.

17. Criminal Statistics for the year ended 30th September, 1908.
Printed for both distribution and sessional papers.

18. Return of the Eleventh General Election for the House of Commons of Canada, held on the 26th day of October, 1908... .. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 9.

19. Report of the Minister of Public Works, for the fiscal year ended 31st March, 1908. Presented 3rd February, 1909, by Hon. W. Pugsley.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 10.

19*a*. Georgian Bay Ship Canal. Report upon survey, with plans and estimates of cost, 1908. Presented 22nd January, 1909, by Hon. W. Pugsley.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 11.

20. Report of the Department of Railways and Canals for the fiscal year ended 31st March, 1908. Presented 19th February, 1909, by Hon. G. P. Graham.
Printed for both distribution and sessional papers.

20*a*. Canal Statistics for the season of navigation, 1907.
Printed for both distribution and sessional papers.

20*b*. Railway Statistics of Canada, for the year ended 30th June, 1908. Presented 25th February, 1909, by Hon. G. P. Graham.*Printed for both distribution and sessional papers.*

20*c*. Third Report of the Board of Railway Commissioners for Canada, to 31st March, 1907, for the year ending 31st March, 1908. Presented 29th January, 1909, by Hon. G. P. Graham.. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 12.

21. Report of the Department of Marine and Fisheries (Marine) for 1908. Presented 18th February, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

21*a*. Seventh Report of the Geographic Board of Canada; containing all decisions to 30th June, 1908. Presented 22nd February, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

21*b*. List of Shipping issued by the Department of Marine and Fisheries, being a list of vessels on the registry books of Canada on the 31st December, 1908.
Printed for both distribution and sessional papers.

22. Report of the Department of Marine and Fisheries (Fisheries) for 1908. Presented 9th February, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

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23. Report of the Harbour Commissioners, &c.
Printed for both distribution and sessional papers.

23*a*. Report of the Chairman of the Board of Steamboat Inspection, 1908.
Printed for both distribution and sessional papers.

24. Report of the Postmaster General, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. R. Lemieux.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 14.

25. Report of the Department of the Interior, for the fiscal year ended 31st March, 1908. Presented 15th February, 1909, by Hon. F. Oliver.
Printed for both distribution and sessional papers.

25*a*. Report of the Chief Astronomer for the fiscal year ending 31st March, 1908. Presented 13th May, 1909, by Hon. F. Oliver.. ..*Printed both for distribution and sessional papers.*

25*b*. Annual Report of the Topographical Surveys Branch, including Report of the Surveyor General of Dominion Lands, 1907-1908.*Printed for both distribution and sessional papers.*

25*c*. Correspondence and papers, including financial statement, relating to Seed Grain Distribution of 1908 in the provinces of Saskatchewan and Alberta. Presented 28th January, 1909, by Hon. F. Oliver.. ..*Printed for both distribution and sessional papers.*

25*d*. Return to an order of the House of Commons, dated 1st March, 1909, showing how many bushels of seed wheat were bought for Saskatchewan and Alberta for the season of 1908, whom it was bought from, at what price, and what grade it was; if the wheat so bought was cleaned for seed; how the wheat so bought was used; who it was sold to, and at what prices; the total loss in connection with the wheat so bought. Presented 15th March, 1909.—*Mr. Sharpe (Lisgar).. .. ..Not printed.*

25*e*. Return to an order of the House of Commons, dated 1st March, 1909, showing how many bushels of English oats were bought for seed in Saskatchewan and Alberta for the season of 1908, and at what prices; the condition the oats were in before or when they were bought; if used for seed or sold; whom they were sold to and in what places; the total loss in connection with the oats bought in England, and any complaints there were about them. Presented 15th March, 1909.—*Mr. Sharpe (Lisgar).....Not printed.*

CONTENTS OF VOLUME 15.

26. Summary Report of the Geological Survey Branch of the Department of Mines, for the calendar year 1908. Presented 3rd May, 1909, by Hon. W. Templeman.
Printed for both distribution and sessional papers.

26*a*. Summary Report of the Mines Branch of the Department of Mines, for the nine months ended 31st December, 1908..*Printed for both distribution and sessional papers.*

27. Report of the Department of Indian Affairs, for the year ended 31st March, 1908. Presented 22nd January, 1909, by Hon. F. Oliver.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 16.

28. Report of the Royal Northwest Mounted Police, 1908. Presented 9th March, 1909, by Sir Wilfrid Laurier.. .. ..*Printed for both distribution and sessional papers.*

29. Report of the Secretary of State of Canada, for the year ended December, 1907, and the first three months of the year 1908 Presented 22nd January, 1909, by Hon. C. Murphy.. .. ..*Printed for both distribution and sessional papers.*

30. Civil Service List of Canada, 1908. Presented 22nd January, 1909, by Hon. C. Murphy.
Printed for both distribution and sessional papers.

31. Report of the Board of Civil Service Examiners, for the year ended 31st December, 1908.
Printed for both distribution and sessional papers.

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32. Annual Report of the Department of Public Printing and Stationery, for the fiscal year ended 31st March, 1908. Presented 7th May, 1909, by Hon. C. Murphy.
Printed for both distribution and sessional papers.

33. Report of the Joint Librarians of Parliament for the year 1908. Presented 21st January, 1909, by the Hon. the Speaker.. .. ..*Printed for sessional papers.*

34. Report of the Minister of Justice as to Penitentiaries of Canada, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. W. Paterson.
Printed for both distribution and sessional papers.

35. Report of the Militia Council, for the fiscal year ended 31st March, 1908. Presented 9th March, 1909, by Sir Frederick Borden.
Printed for both distribution and sessional papers.

35*a*. Memorandum respecting the estimates for Militia and Defence for 1909-10. Presented 9th March, 1909, by Sir Frederick Borden.
Printed for both distribution and sessional papers.

36. Report of the Department of Labour, for the fiscal year ended 31st March, 1908. Presented 21st January, 1909, by Hon. R. Lemieux.
Printed for both distribution and sessional papers.

37. Report upon the Survey of the Georgian Bay Ship Canal, with plans and estimate of cost.. .. ..*See No. 19a.*

38. Report of the Hon. Mr. Justice Cassels, Commissioner appointed to investigate the affairs of the Department of Marine and Fisheries. Presented 22nd January, 1909, by Hon. L. P. Brodeur.. .. ..*Printed for both distribution and sessional papers.*

38*a*. Minute of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 29th March, 1909:—The Committee of the Privy Council have had under consideration a report, herewith, dated 27th March, 1909, from the Minister of Marine and Fisheries, upon the investigation recently held by the Honourable Walter Cassels respecting the statement contained in the Report of the Civil Service Commission reflecting upon the integrity of officials of the Department of Marine and Fisheries and submitting certain recommendations affecting the officials therein named. The Committee, concurring in the said Report and the recommendation therein contained, submit the same for Your Excellency's approval. Presented 30th March, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

39. Report of the Royal Commission appointed to inquire into industrial disputes in the cotton factories of the province of Quebec. Presented 25th January, 1909, by Hon. R. Lemieux.. .. ..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 17—*Continued.*

40. Statement of expenditure on account of miscellaneous unforeseen expenses from the 1st April, 1908, to the 20th January, 1909, in accordance with the Appropriation Act of 1908. Presented 26th January, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

41. Statement of superannuations and retiring allowances in the civil service during the year ended 31st December, 1908, showing name, rank, salary, service, allowance and cause of retirement of each pearson superannuated or retired, also whether vacancy filled by promotion or by new appointment, and salary of any new appointee. Presented 26th January, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

42. Statement in pursuance of section 17 of the Civil Service Insurance Act for the year ending 31st March, 1908. Presented 26th January, 1909, by Hon. W. Paterson.
Not printed.

43. Statement of Governor General's Warrants issued since the last session of parliament, on account of the fiscal year 1908-9. Presented 26th January, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

44. Ordinances of the Yukon Territory, passed by the Yukon Council in the year 1908. Presented 27th January, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

45. Third Report of the Board of Railway Commissioners.. .. ..*See No. 20c.*

46. Report of the Commissioners of the Transcontinental Railway, for the year ending 31st March, 1908. Presented 29th January, 1909, by Hon. G. P. Graham.
Printed for both distribution and sessional papers.

46*a*. Return to an order of the House of Commons, dated 15th February, 1909, for a copy of all correspondence between Rothwell, Johnston & Stubbs, lawyers, of Winnipeg, and the government, or the Transcontinental Railway Commissioners respecting their instructions in regard to the purchase of the Winnipeg terminals from Kern & Mathews, and in respect to the legal services rendered by them for the government, and passing of titles of the property, and a copy of the solicitors' bills of costs, charges and correspondence arising therefrom; and of all correspondence between the government and the Railway Commissioners and the vendors, Kern & Mathews, from the commencement of the negotiations; and also showing what steps, if any, were taken towards expropriating the property, or obtaining judicial determination as to the value of the said property. Presented 4th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

46*b*. Return to an order of the House of Commons, dated 22nd February, 1909, showing the final estimates on the contract entered into on August 22, 1906, between J. D. McArthur and Smith & Prendible on the National Transcontinental Railway, for work from station 9370 to station 9480; and the contract entered into on 21st November, 1908, between the same parties on the same railway for work from station 9260 to station 9370. Presented 11th March, 1909.—*Mr. Haggart (Winnipeg)*.. .. ..*Not printed.*

46*c*. Report of Collingwood Schreiber, Esquire, chief engineer western division National Transcontinental Railway. Presented 15th March, 1909, by Hon. G. P. Graham.
Not printed.

46*d*. Interim Report of the Commissioners of the Transcontinental Railway, for the nine months ending 31st December, 1908. Presented 15th March, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

46*e*. Statistics of Dominion Police Constables employed along the line of the Transcontinental Railway during the calendar year 1908. Presented 23rd March, 1909, by Hon. A. B. Aylesworth.. .. ..*Not printed.*

46*f*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all letters, correspondence, statements and writing between the Grand Trunk Pacific Railway Company, or its engineers or agents, and the Commissioners of the Transcontinental Railway, or their engineers or agents, and between the commissioners and their engineers, and between the commissioners and their engineers and agents and the con-

CONTENTS OF VOLUME 17—*Continued.*

tractors or sub-contractors on Districts B and F after mentioned, as to classification or alleged over classification on Districts B and F of the Eastern Division of said railway, and of all estimates, returns, certificates, memoranda, statements or writings, showing classification or over-classification of the cuttings and work on said Districts B and F. Presented 22nd April, 1909.—*Mr. Lennox.. .. ..Not printed.*

46*g*. Return to an order of the House of Commons, dated 26th January, 1909, showing the names of all persons appointed to office or employment by the Transcontinental Railway Commission since its creation, showing the county or city from which such person came, the office or employment to which he was appointed, the date of appointment, the salary and allowances attached thereto, the place or district where the work of each employee is done, and the total amount paid each year for all such services up to the end of December, 1908. Presented 22nd April, 1909.—*Mr. Foster.. .. .. ..Not printed.*

46*h*. Return to an order of the House of Commons, dated 3rd March, 1909, for a copy of all tenders received for the construction of the following sections of the Eastern Division of the National Transcontinental Railway, together with the itemized schedules of the engineer's estimates of quantities on which the award of contracts was based, the sections referred to being those mentioned in the answer of the Minister of Railways and Canals in the House on the 13th April, 1908, as follows:—

STATEMENT NO. 1.—COMMISSIONERS—EASTERN DIVISION.

Mileage from Moncton.		Description.	No. of One Miles.	Amount of Estimate on which Contracts were let.	Date of	
From	To				Contract.	Completion.
				$ cts.		
0·00	50·00	Moncton to near Chipman	50·00	989,895 90	Mar. 14,'07	Sept. 1,'08
50·00	58 55	Near Chipman easterly 8·55 miles	8·55	289.190 62	Aug 23,'07	Aug, 1,'08
58·55	97·60	Near Chipman westerly to I.C.R. crossing	39·05	767,434 95	Mar. 28,'08	Sept. 1,'10
97·60	164 00	I.C.R. crossing to Mile 164	66·40	1,898,124 21	" 28,'08	" 1,'10
164·00	195·80	Mile 164 to Grand Falls	31·80	1,646,253 65	" 28,'08	" 1,'10
195·80	256·68	Grand Falls to New Brunswick boundary	60·88	1,385,941 09	" 9,'07	" 1,'08
256·68	309 74	N.B. boundary to 150 miles east of Quebec Bridge	5 143·06	2,377,409 00	" 28,'08	" 1,'10
309 74	459·74	From Quebec Bridge 150 miles eastward	8·89	5,011,346 50	" 9,'07	" 1,'09
		Quebec Bridge link (not included in estimate)	1·11			
459 74	509·74	Quebec Bridge westerly 50 miles	50·00	1,489,537 92	May 15,'06	" 1,'07
509 74	609·74	50 miles west Quebec Bridge to 150 miles west	100·00	3,807,719 54	" 15,'06	" 1,'07
609·74	654·74	150 miles west Quebec Bridge to near Waymontachene	45·00	1,691,073 41	Mar. 14,'07	" 1,'08
654·74	656·07	To be included in this contract	1·33			
656·07	877·75	Near Waymontachene to near Harricanaw River	221·68	Not let.		
877·75	1,027·75	Near Harricanaw River to Junction T. & N. O. Ry.	150·00	3,986,901 42	" 14,'07	" 1,'09
1,021·75	1,127·75	Junction T. & N. O. Ry. for 100 miles west.	100·00	3,936,566 00	" 28,'08	" 1,'10
1,027·75	1,171·85	100 miles west of Junction T. & N. O. Ry. to west end of District 'D'	44·10	Not let.		
1,171·85	1,334·35	West end of District 'D' westerly	162·50	"		
1,334·35	1,409·35	From 19½ miles west of Mud River, easterly.	75·00	2,101,499 88	" 28,'08	" 1,'10
1,409·35	1,429·76	" " " to west end of District 'F'	20 41	Not let.		
1,429·76	1,557·80	From westward District 'E' to Lake Superior Junction	128·04	"		
1,557·80	1,804·66	From Lake Superior Junction to west bank of Red River	246·86	13,010,398 92	May 15,'06	" 1,'07

Presented 26th April, 1909.—*Mr. Lennox.. .. ..Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

46*i*. Return to an order of the House of Commons, dated 3rd March, 1909, showing the various quantities of work of each description or class actually executed by the several contractors and certified as correct by the engineers and paid for up to 31st December, 1908, upon the several sections of the Eastern Division of the National Transcontinental Railway, where the sections have not been completed, the various chief engineers' estimates of the quantities of the various class of work remaining to be executed, together with an estimate of the cost of completing the same, based on the contractors' prices attached to each tender. Presented 26th April, 1909.—*Mr. Lennox*..*Not printed.*

46*j*. National Transcontinental Railway. Information in reply to questions by Mr. R. L. Borden, M.P. Presented (Senate) 7th May, 1909, by Hon. Sir Richard Cartwright. *Not printed.*

46*k*. Correspondence and reports relative to complaints as to the manner men employed on the Grand Trunk Pacific Railway construction are treated in the hospital at Prince Rupert; the complaint of non-payment of just claims for wages, &c., on the Prince Rupert section of the said railway. Presented 12th May, 1909, by Hon. R. Lemieux. *Not printed.*

46*l*. Supplementary Return to 46*g*. Presented 14th May, 1909.. .. ..*Not printed.*

46*m*. Supplementary Return to No. 46*h*. Presented 14th May, 1909.. .. ..*Not printed.*

47. Return to an address of the House of Commons, dated 25th January, 1909, for a copy of all orders in council, correspondence, reports and other documents and papers, not already brought down, touching or relating to the All-Red Line, so-called, as referred to in the resolution passed by this House on the 9th day of July, 1908, or touching or relating to any similar or substituted proposal for the like purpose. Presented 29th January, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

48. General rules and orders in the Exchequer Court in Canada, 1909. Presented 29th January, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

49. Classification of the following departments of the inside Civil Service at Ottawa, by order in council of the 25th January, 1909, as on the 1st September, 1908, viz.:—Agriculture, Auditor General, Customs, Finance, Superintendent of Insurance, Governor General's Secretary, Indian Affairs, Inland Revenue, Justice, Labour, Library of Parliament, Marine and Fisheries, Militia and Defence, Mines, Post Office, Privy Council, Public Printing and Stationery, Public Works, Railways and Canals, Royal Northwest Mounted Police, Secretary of State, Trade and Commerce. Presented 1st February, 1909, by Sir Wilfrid Laurier.. .. ..*Not printed.*

49*a*. Classification of the officers, clerks and employees of the Library of Parliament, as on the first day of September, 1908. Presented 11th March, 1909, by Sir Wilfrid Laurier. *Not printed*

49*b*. Classification and organization of the officers and clerks of the Distribution Office of the Department of the Printing of Parliament, as on the first day of September, 1908. Presented 11th March, 1909, by Sir Wilfrid Laurier.. .. ..*Not printed.*

49*c*. Classification of the permanent officers, clerks and employees of the House of Commons. Presented 11th March, 1909, by the Hon. the Speaker.. .. ..*Not printed.*

49*d*. Organization of the Staff of the House of Commons, with the classification of the various officers, clerks and employees. Presented 11th March, 1909, by the Hon. the Speaker.. .. ..*Not printed*

CONTENTS OF VOLUME 17—*Continued.*

49*e*. Classification of the Department of the Interior (Inside Service) at Ottawa, by order in council of the 1st February, 1909, as on the 1st September, 1908. Presented 1st April, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

49*f*. Order in Council approved by His Excellency the Governor General on the 5th May, 1908, granting authority for the continued employment of certain officers and clerks of the non-permanent branches of the Department of Public Works. Presented 5th April, 1909, by Hon. W. Pugsley.. .. ..*Not printed.*

49*g*. Schedules in connection with the Civil Service Bill. Presented 10th May, 1909, by Hon. S. A. Fisher.. .. ..*Not printed.*

50. Correspondence, &c., relative to the construction of a subway near the Kingston Junction of the Grand Trunk Railway of Canada. Presented 1st February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

51. Copy of official communication, addressed by the Minister of Marine and Fisheries, to Commissioner Cassels, respecting the abolition of the patronage system in the Department of Marine and Fisheries. Presented 1st February, 1909.—*Mr. Foster.Not printed.*

52. Minutes of proceedings of the Board of Internal Economy of the House of Commons, pursuant to Rule of the House No. 9, from the 16th December, 1907, to 14th July, 1908, inclusive. Presented 29th January, 1909, by the Hon. the Speaker.. .. ..*Not printed.*

53. Return to an order of the House of Commons, dated 10th February, 1908, showing the number of applications for the release of prisoners and the number granted since the year 1896 by the Minister of Justice before the expiry of sentence, the terms of sentence, the date of release, the reasons therefor as far as expedient, and the name of the solicitor who was interested in procuring the release. Presented 2nd February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

54. Report of the Commissioner, Dominion Police Force, for the year 1908. Presented 2nd February, 1909, by Hon. A. B. Aylesworth.. .. ..*Not printed.*

55. A detailed statement of all bonds or securities registered in the Department of the Secretary of State of Canada since last return, 7th December, 1907, submitted to the Parliament of Canada under section 32, of chapter 19, of the Revised Statutes of Canada, 1906. Presented 2nd February, 1909, by Hon. C. Murphy.. .. .. ..*Not printed.*

56. Return under chapter 125 (R.S.C.), 1906, intituled: 'An Act respecting Trades Unions,' submitted to Parliament in accordance with section 33 of the said Act. Presented 2nd February, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

57. Report of the Ottawa Improvement Commission for the nine months ended the 31st March, 1908. Presented 4th February, 1909, by Hon. W. Paterson.. .. ..*Not printed.*

58. Partial Return to an order of the House of Commons, dated 1st February, 1909, showing what persons have been appointed, transferred, or promoted, respectively, since 1st July, 1908, in the various departments coming under the operation of the Civil Service Act of 1908; the positions and salaries of such persons as have been transferred and promoted at the time of the change; the positions and salaries at present of all who have been so appointed, transferred or promoted, and which of these appointments, transfers or promotions were made in accordance with the present Civil Service Act. Presented 5th February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*a*. Partial Return to an address of the House of Commons, dated 1st February, 1909, for a copy of all orders in council, departmental orders, rules and regulations, and schemes of reorganization adopted in the several departments, rules and regulations

CONTENTS OF VOLUME 17—*Continued.*

made by the Civil Service Commissioners, and all other orders, steps and proceedings made, had or taken under or pursuant to the Civil Service Amendment Act, 1908. Presented 8th February, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

58*b*. Supplementary Return to No. 58. Presented 8th February, 1909... .. ..*Not printed.*

58*c*. Return to an order of the House of Commons, dated 10th February, 1909, showing how many officials were appointed in the year 1908 to the various departments and brought from the outside service into the inside service under the Civil Service Act, with their names and salaries; and what addition to the various staffs have been made thereby. Presented 11th February, 1909.—*Mr. Sharpe (Ontario)*.. .. ..*Not printed.*

58*d*. Further Supplementary Return to No. 58. Presented 11th February, 1909..*Not printed.*

58*e*. Return to an order of the House of Commons, dated 2nd February, 1909, showing the names of the temporary clerks formerly paid out of Civil Government Contingencies who have been classified under section 7 of the Civil Service Act since the 1st September, 1908, and placed in the third division subdivision B; the position filled by each at the time of classification and the salary paid, the length of service, the age and what examination has been passed; the position to which assigned under the classification and the salary attached; the names of the persons appointed to the Civil Service since 1st September, 1908, under section 47 of the Civil Service Act, the positions to which appointed, the date of appointment, and the salary attached. Presented 11th February, 1909.—*Mr. Foster*. .. ..*Not printed.*

58*f*. Further Supplementary Return to No. 58. Presented 18th February, 1909.*Not printed.*

58*g*. Return to an address of the House of Commons, dated 15th February, 1909, for copies of orders in council by authority of which increases of salary detailed on pages 556, 557, 558, 559, 560, 561, 562, 563 and 564, unrevised *Hansard*, 1909, were granted. Presented 23rd February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*h*. Return to an order of the House of Commons, dated 15th February, 1909, showing the name and date of the first appointment, position and salary at time of increase of each clerk or other employee in the outside service of the Department of Public Works at Ottawa, to whom any increase of pay was given on and after the 1st of April, 1908, the amount of such increase or increases, the date on which increase was granted, the date it became effective, and the date on which the increase was paid. 2. A similar return from each of the following Departments: Militia and Defence, Marine and Fisheries, Railways and Canals, Customs, Inland Revenue, Public Printing, Indian Affairs, Auditor General, Finance, Mines and Post Office Department. Presented 23rd February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*i*. Return to an address of the House of Commons, dated 15th February, 1909, for copies of orders in council passed from the 1st of May, 1908, to 31st January, 1909, authorizing increases to the employees of the Department of Public Works. Presented 25th February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

58*j*. Orders in Council attached to Sessional Paper No. 58*g* herewith were the only ones passed in connection with the increases of salary detailed on pages 556, 557, 558, 559, 560, 561, 562, 563 and 564, unrevised *Hansard*, 1909. The increases given to the officials employed in the Surveys Branch were granted in accordance with the Act respecting the Department of the Interior, chapter 54, sections 6 and 8, of the Revised Statutes, which relate to the employment and payment of temporary assistants in the Surveyor General's Branch, for the performance of services requiring technical, scientific or professional qualifications. The increases given to the employees on Dominion Lands, Outside Service, School Lands, Immigration and Boundary Surveys were granted under departmental authority. Presented 26th February, 1909, by Hon. F. Oliver.

Not printed.

CONTENTS OF VOLUME 17—*Continued.*

59. Return of orders in council which have been published in the *Canada Gazette* and in the *British Columbia Gazette*, between 1st December, 1907, and 1st December, 1908, in accordance with provisions of subsection (*d*) of section 38 of the regulations for the survey, administration, disposal and management of Dominion lands within the 40-mile railway belt in the province of British Columbia. Presented 5th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

60. Return under the provisions of section 57 of the Northwest Irrigation Act, being chapter 61 of Revised Statutes of Canada, 1906, being copies of all Orders in Council, which have been passed or regulations which have been made or forms prescribed by the Minister of the Interior under that Act, and which have been published in the *Canada Gazette*, since the date of the presentation to Parliament of a similar return at its last preceding session. Presented 5th February, 1909, by Hon. F. Oliver.
Not printed.

61. Return under the provision of section 77 of the Dominion Lands Act, chapter 20, of the Statutes of 1908, of section 5 of the Dominion Lands Surveys Act, chapter 21, of the same Statutes, of subsection 2, of section 13 of the Dominion Forest Reserves Act, chapter 56, R.S.C., 1906, of subsection 3 of section 5 of the Rocky Mountains Park Act, chapter 60, R.S.C., 1906, and of subsection 2 of section 18 of the Yukon Act, chapter 63, R.S.C., 1906, being copies of all orders in council, ordinances or regulations which have been passed under any of the above mentioned Acts and which have been published in the *Canada Gazette*, since the date of the presentation to Parliament of a similar return at its last preceding session. Presented to Parliament of a similar return at its last preceding session. Presented 5th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

62. Return to an order of the House of Commons, dated 25th January, 1909, for a copy of all correspondence during the last three months with reference to Lachute Mills post office. Presented 8th February, 1909.—*Mr. Perley*.. .. ..*Not printed.*

63. Order in Council, &c., in relation to the issue of $50,000,000 additional stock by the Canadian Pacific Railway Company. Presented 8th February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

63*a*. Return (in so far as the Department of the Interior is concerned) of copies of all orders in council, plans, papers, and correspondence which are required to be presented to the House of Commons, under a resolution passed on 20th February, 1882, since the date of the last return under such resolution. Presented 8th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

63*b*. Correspondence on the subject of the Canadian Pacific Railway Company securing running rights over the Intercolonial Railway between St. John and Halifax. Presented 8th February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

63*c*. Return of lands sold by the Canadian Pacific Railway Company, from the 1st October, 1907, to the 1st October, 1908, and the names of the purchasers. Presented 15th February, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

63*d*. Return to an address of the House of Commons, dated 8th February, 1909, for a copy of any order in council authorizing the Canadian Pacific Railway to increase its capital stock. Presented 18th February, 1909.—*Mr. Maclean (York)*.. .. ..*Not printed.*

63*e*. Further correspondence on the subject of the Canadian Pacific Railway Company securing running rights over the Intercolonial Railway between St. John and Halifax. Presented 22nd February, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

64. Return to an order of the House of Commons, dated 1st February, 1909, showing what sums of money have been paid each of the several holders of stock in the Quebec Bridge Company on account of stock, bonus and interest, respectively; and what amount remains to be paid and to whom. Presented 8th February, 1909.—*Mr. Foster.*
Not printed

65. Return to an order of the House of Commons, dated 1st February, 1909, showing what disposition has been made in detail of the vote of $25,000 under Miscellaneous, for seed grain in Alberta and Saskatchewan. Presented 11th February, 1909, by Hon. F. Oliver.. .. .. .

CONTENTS OF VOLUME 17—*Continued.*

67*e*. Copy of Order in Council constituting a Board of Management for the Government Railways—the Intercolonial and the Prince Edward Island Railway—and naming the members of the said Board of Management. Presented 26th April, 1909, by Hon. G. P. Graham.. .. ..*Not printed.*

67*f*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all petitions and correspondence, whether by letter or telegrams, and all plans submitted either to the Railway Department or to the authorities of the Intercolonial Railway, and of all decisions arrived at, relating to the enlargement of the station of the Intercolonial Railway at Cap St. Ignace, or the construction of a new station. Presented 14th May, 1909.—*Mr. Roy (Montmagny)*.. .. ..*Not printed.*

67*g*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all correspondence, memorials, reports and decisions arrived at respecting the construction of a tank at the Intercolonial Railway station at Cap St. Ignace, and the increased cost to be paid to the Aqueduct Company supplying the water for the engines running on the said railway. Presented 14th April, 1909.—*Mr. Roy (Montmagny)*..*Not printed.*

67*h*. Return to an address of the Senate, dated 18th March, 1909, praying for all petitions presented to the Governor General in Council, asking that the Intercolonial Railway may be placed under the Railway Board, together with all correspondence in connection therewith. Presented 4th May, 1909.—*Hon. Sir Mackenzie Bowell*.. ..*Not printed.*

67*i*. Certified copy of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 20th April, 1909, *re* Intercolonial Railway. Presented (Senate) 30th April, 1909, by Hon. Sir Richard Cartwright.. ..*Not printed.*

68. Return to an order of the House of Commons, dated 1st February, 1909, for the production of all the original applications and tenders filed in the Department of the Interior in respect of Timber Berth No. 1122, and that the same be laid on the Table of the House, said papers not to be part of the archives of this House, but to be returned by the Clerk to the Department of the Interior after inspection. Presented 12th February, 1909.—*Mr. Campbell*... .. ..*Not printed.*

69. Return to an order of the House of Commons, dated 1st February, 1909, showing what lands, at what price, and to what persons or corporations have been sold along the route of the Grand Trunk Pacific for stations, terminal or town site purposes. Presented 12th February, 1909.—*Mr. Foster*.. .. ..*Not printed.*

70. Return to an order of the House of Commons, dated 26th January, 1909, showing, year by year, since 1881, the expenditures charged annually to capital under the caption of Dominion lands, together with a similar statement of the total receipts from sale of lands, town sites, &c., where public domain has been permanently alienated. Presented 12th February, 1909.—*Mr. Ames*.. .. ..*Not printed.*

71. Return to an order of the House of Commons, dated 1st February, 1909, showing the amount of gold, silver and copper coins manufactured by the branch of the Royal Mint in Canada, and the amount of said coin not disposed of since it commenced operation up to 1st January, 1909. 2. How much silver in its crude state has been offered for sale to the management of the Royal Mint from Canadian mines in the year 1908, and what quantity has been accepted. 3. What reason the government gives for not purchasing all the silver in its crude state that is offered. 4. The system used in deciding from whom to make purchases. 5. How many Canadian mines have sold silver to the government, the names of said mines, and the quantity purchased from each. Presented 12th February, 1909.—*Mr. Armstrong*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

71*a*. Return to an order of the House of Commons, dated 1st February, 1909, showing the total cost of the Royal Mint to 31st December, 1908; the total expenses of Royal Mint for the calendar year 1908, (*a*) for additions and improvements, (*b*) for maintenance, (*c*) for salaries, (*d*) for bullion copper, silver and gold, respectively; the amount of copper, silver and gold coinage that was struck during that time; and the net profit on each kind of coinage. Presented 31st March, 1909.—*Mr. Foster*.. .. .. ..*Not printed.*

72. Return to an order of the House of Commons, dated 25th January, 1909, showing, in detail, the items comprised in the amount $699,235.52, given as miscellaneous revenue for the month of December, 1908. Presented 12th February, 1909.—*Mr. Ames.*
Not printed.

73. Return to an order of the House of Commons, dated 25th January, 1909, showing all free mail deliveries established or authorized since the 30th of June, 1908, in towns or villages; all free rural mail deliveries established or authorized since said date, the number of persons served by each such free mail delivery in the community or route for which it has been so established and the cost in each instance. Presented 12th February, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

73*a*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence and memoranda relating to rural mail delivery in the province of Alberta. Presented 17th May, 1909.—*Mr. McCarthy*.. .. ..*Not printed.*

74. General orders issued to the Militia between 28th November, 1907, to 31st January, 1909. Presented 15th February, 1909, by Sir Frederick Borden.. .. ..*Not printed.*

75. Return to an order of the House of Commons, dated 8th February, 1909, in detail showing what disposition has been made of the vote of $35,000 to cover the cost of boring for oil, gas, coal, &c., passed on 15th July, 1908, with a copy of all correspondence, reports, telegrams, memoranda, &c., connected with the matter, giving the district in which the wells were drilled, the cost and present condition of each well, and a copy of all contracts and tenders. Presented 15th February, 1909.—*Mr. Armstrong*..*Not printed.*

76. Return to an order of the House of Commons, dated 25th January, 1909, showing: 1. The number of accidents which occurred at level railway crossings in Canada during the period of five years prior to the 31st of March, 1908. 2. The time where and the places at which these accidents occurred. 3. The alleged cause of the accident in each case. 4. The number of persons killed in each case. 5. The number of persons injured and the nature of the injury in each case. 6. A statement in each case as to whether the crossing was protected or not, and if protected, by what means. Presented 16th February, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

76*a*. Return to an order of the House of Commons, dated 10th February, 1909, showing since the constitution of the Railway Board, in how many cases they have ordered protection of highway-railway crossings, (*a*) by separation of the highway and railway, (*b*) by gates, (*c*) by other means, and the method adopted in each case; how the proceedings were initiated in each case; what order was made as to the expense of the work or service in each; at what points separation of highway and railway was ordered, and the actual or estimated cost in each case; in how many, and what cases applications were refused. Presented 4th March, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

76*b*. Return to an address of the Senate, dated 25th February, 1909, for copies of all requests to the Board of Railway Commissioners by the Minister of Railways, under section 28 of the Railway Act, and also copies of all orders in council made within the last twelve months respecting level crossings by railways over public highways, the dates of making such requests or orders in council to be given. Presented 19th March, 1909.—*Hon. Mr. Ferguson*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

77. Return to an order of the House of Commons, dated 1st February, 1909, showing all importations of steel bars, steel ingot, rolled iron and steel, steel rails and structural steel, into the Dominion of Canada, by months, since the 31st day of March, 1908, and up to the 31st January, 1909, showing: (*a*) the quantity imported, (*b*) the country from which imported. (*c*) port of entry, (*d*) the value of the imports, and (*e*) the amount of duty paid thereupon. Presented 18th February, 1909.—*Mr. Boyce.*
Not printed.

78. Return to an order of the House of Commons, dated 8th February, 1909, showing the number of seizures made by the Department of Inland Revenue during the years 1904, 1905, 1906, 1907 and 1908; the date of seizures; by whom seized; what the seizures consisted of; amount realized by the sale of such material seized; and how the seized material was disposed of. Presented 18th February, 1909.—*Mr. Barr.. .. ..Not printed.*

78*a*. Return to an order of the House of Commons, dated 10th February, 1909, showing the number of seizures made by the Department of Customs during the years 1904, 1905, 1906, 1907 and 1908; the date of seizures; by whom seized; what the seizures consisted of; the party from whom seized; amount realized by the sale of such material seized; and how the seized material was disposed of. Presented 11th March, 1909.—*Mr. Barr.*
Not printed.

79. Return showing remissions of interest made under subsection 2 of section 88 of the Indian Act, chapter 81, Revised Statutes of Canada, for the year ended 31st March, 1908. Presented 18th February, 1909, by Hon. F. Oliver.. .. ..Not printed.

80. Return to an order of the House of Commons, dated 3rd February, 1909, showing how many sessional clerks and messengers have been appointed to the House of Commons since 1880; their names and the date of their appointments; if appointed by the Internal Economy Commission or otherwise; how many sessional clerks and messengers have been removed from the House of Commons since 1880; their names and the dates of their removal; if removed by the Internal Economy Commission or otherwise. Presented 19th February, 1909.—*Mr. Paquet.. .. ..Not printed.*

81. Copy of an order in council of the 15th February, 1909, relative to the Second Joint Report of the Commission for the demarcation of the meridian of the 141st degree of west longitude (Alaska Boundary), appointed in virtue of the First Article of the Convention between Great Britain and the United States, signed at Washington on the 21st April, 1906; and also a copy of the said Report. Presented 22nd February, 1909, by Hon. F. Oliver.. .. ..Not printed.

82. Return to an order of the House of Commons, dated 3rd February, 1909, showing what precautionary measures were taken by the government to combat the introduction of the foot and mouth disease into Canada from United States; what officials were appointed especially for the work, the dates of appointment, length of service, remuneration paid to each as salary or expenses; the present danger, and when the embargo on live stock from the United States was raised. Presented 22nd February, 1909.—*Mr. Sharpe (Ontario).. .. ..Not printed.*

82*a*. Return to an order of the House of Commons, dated 8th February, 1909, showing what States of the United States have been quarantined by order in council by reason of the prevalence of foot and mouth disease in such States; how many inspectors were appointed by the government to prevent the importation of live stock into Canada from quarantine States; at what points such inspectors were stationed; and what salaries these inspectors were paid. Presented 22nd February, 1909.—*Mr. Chisholm (Huron).. .. ..Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

83. Return to an order of the House of Commons, dated 10th February, 1909, showing the quantity of summer-caught white fish, and the value, the pickerel, quantty and value, the sturgeon, quantity and value, exported to the United States for each year, respectively, during the years from November 1893 to November, 1908, from the Manitoba ports. Presented 23rd February, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

84. Return to an order of the House of Commons, dated 8th February, 1909, showing, in detail, all moneys received by this government from the sale of land, forest, mines, fisheries and other natural resources of the province of Alberta for the last fiscal year. Presented 23rd February, 1909.—*Mr. McCarthy*.. .. ..*Not printed.*

85. Return to an order of the eHouse of Commons, dated 17th February, 1909, showing from whom the wood-working machinery was purchased for Intercolonial Railway shops at Moncton or elsewhere since 1st January, 1908, how much from each and the prices paid; from whom the iron-working machinery was purchased for the Intercolonial Railway shops at Moncton, or elsewhere, since 1st January, 1908, how much from each, and the prices paid, the dates, (*a*) of purchase, and (*b*) of delivery. Presented 23rd February, 1909.—*Mr. Clare*.. .. ..*Not printed.*

85*a*. Return to an order of the House of Commons, dated 22nd March, 1909, showing the claims of any person or persons in Nova Scotia against the government by reason of personal damages or losses of animals or damages to property on account of the Intercolonial Railway, settled or paid between 1st June and 31st December, 1908, together with the names and addresses of such persons, the nature of their claims, how settlement was effected, and on what date settlement was effected in each case. Presented 26th March, 1909.—*Mr. Rhodes*.. .. ..*Not printed.*

86. Return to an address of the House of Commons, dated 15th February, 1909, for a copy of all orders in council, regulations, reports, correspondence, documents, and papers under, relating to or touching the several treaties of 11th April, 1908, between His Majesty and the United States of America, relating to or touching any action, proceeding, appointment, reports or other matter made, had or undertaken under or pursuant to the said treaties or either of them. Presented 25th February, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

87. Return to an order of the House of Commons, dated 26th February, 1909, for copy of a report of Thomas Costello, special officer of customs, on the subject of the Woollen Industry in Great Britain. Presented 26th February, 1909.—*Mr. Paterson.*
Printed for both distribution and sessional papers.

88. Copy of special agreement for the submission of question relating to Fisheries on the North Atlantic Coast under the general treaty of Arbitration concluded between the United States and Great Britain on the 4th day of April, 1908. Presented 26th February, 1909, by Hon. A. B. Aylesworth.. .. ..*Not printed.*

89. Return to an order of the House of Commons, dated 22nd February, 1909, showing how many heads of stock there are on the respective experimental farms and what they consist of; the estimated value of the different kinds, and for what purposes they are utilized; how many acres there are in each experimental farm; how many acres there are under cultivation on each farm. Presented 26th February, 1909.—*Mr. Staples*.. .. ..*Not printed.*

90. Declaration of Principles, North American Conservation Conference. Presented 26th February, 1909, by Hon. S. A. Fisher..*Printed for both distribution and sessional papers.*

91. Statement of insurance paid on the St. Lawrence route on merchandise, provisions and grain, from 1900 to 1907, both years inclusive. Presented (Senate) 28th January, 1909, by Hon.. Sir Richard Cartwright.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

92. Statement of the affairs of the British Canadian Loan and Investment Company (Limited), for the year ended the 31st of December, 1908, also a list of the shareholders for the same year, in compliance with the Loan Corporation Act. Presented (Senate) 25th February, 1909, by the Hon. the Speaker.. .. ..*Not printed.*

93. Copy of the Progress Report, Hudson Bay Railway Surveys, 1st February, 1909. Presented 4th March, 1909.—*Hon. G. P. Graham*.. .. ..*Not printed.*

93*a*. Return to an order of the House of Commons, dated 8th February, 1909, showing all surveys made to date in the prosecution of the proposed Hudson Bay Railway. Presented 8th March, 1909.—*Mr. Meighen*.. .. ..*Not printed.*

94. Return to an order of the House of Commons, dated 26th January, 1909, of all correspondence, papers and reports of engineers or others, relating to the authorization and construction of a canal from Lake Simcoe to Newmarket, including all contracts entered into, the amount of money so far paid, and the estimated cost of the completed work, with plans showing the capacity of the canal, and for all statements and estimates of the commercial reasons for the work. Presented 4th March, 1909.—*Mr. Foster*.. .. ..*Not printed.*

94*a*. Return to an order of the House of Commons, dated 22nd March, 1909, showing: 1. Who were employed to value the land of the right of way of the canal from Holland River to Newmarket, and what other duties than valuation of lands these parties were entrusted with. 2. The remuneration of each of these valuators. 3. How long they were employed, and upon what terms. 4. (*a*) What properties they valued, (*b*) at what amount or rate in each case, (*c*) the acreage of each property, (*d*) in how many cases, by names, the valuations were accepted by the owners, (*e*) in how many cases, by names, the valuations were finally rejected by the owners, (*f*) in what cases expropriation proceedings were resorted to, and (*g*) the result as compared with valuators' figures. 5. What titles to all properties have been required. Presented 31st March, 1909.—*Mr. Lennox*.. .. ..*Not printed.*

95. Return to an order of the House of Commons, dated 8th February, 1909, for a copy of all lists of voters as prepared by the enumerators and completed by the deputy returning officers for the several polling subdivisions in the electoral riding of Calgary, in the province of Alberta, and used in the recent general election for the House of Commons. Presented 4th March, 1909.—*Mr. McCarthy*.. .. ..*Not printed.*

95*a*. Return to an order of the House of Commons, dated 8th February, 1909, showing the names of the deputy returning officer, poll clerk, scrutineer or agent, or any other officer who acted, respectively, as such in the several polling subdivisions in the electoral district of Calgary in the recent general election for the House of Commons. Presented 4th March, 1909.—*Mr. McCarthy* .. ..*Not printed.*

95*b*. Return to an order of the House of Commons, dated 15th March, 1909, showing, in respect of the election for the House of Commons, held in the county of Montcalm, on the 26th of October, 1908, and in respect of each polling subdivision (*a*) the number of votes polled for each candidate; (*b*) the total number of valid votes polled; (*c*) the number of rejected ballots; (*d*) the number of spoiled ballots; (*e*) the number of voters on the revised voters' list; (*f*) the number of ballot papers in possession of the deputy returning officer at the hour of the opening of the poll; (*g*) the number of ballot papers remaining unused in the hands of the deputy returning officer at close of the pool; (*h*) the name and the address of the returning officer and names and addresses of each of his deputies and poll clerks; (*i*) all correspondence between the government, or any officer thereof, and the returning officer, or any deputy returning officer or poll clerk or, any candidate in respect of said election. Presented 22nd March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

95*c*. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all lists of voters as prepared by the enumerators and completed by the deputy returning officers for the several polling subdivisions in the electoral riding of Qu'Appelle, and used in the recent general election for the House of Commons; also for a return showing the boundaries of the said polling subdivisions, and the names of the enumerators, deputy returning officers, poll clerks, candidates' agents or scrutineers who acted for each poll. Presented 22nd March, 1909.—*Mr. Lake..Not printed.*

96. Return to an order of the House of Commons, dated 11th February, 1909, for a copy of a report made by Charles Olin to the Department of the Interior, of his visit to Sweden for that department in 1907-8, and of all correspondence leading up to his appointment to make such trip, and in any way relating thereto. Presented 4th March, 1909.—*Mr. Goodeve.. .. ..Not printed.*

97. Return to an order of the House of Commons, dated 8th February, 1909, for a copy of all applications that have been received for the transfer of villa lots in section 14, township 24, range 1, west of the fifth meridian, and all correspondence in connection therewith since the 10th day of June, 1908. Presented 4th March, 1909.—*Mr. McCarthy.*
Not printed.

98. Return to an order of the House of Commons, dated 1st March, 1909, showing the average number of men employed in every capacity in the working, maintenance and repairs of the Carillon and Grenville Canals during each of the following months: July and August, 1906 and 1908, September and October, 1907 and 1908; and the total outlay for wages and salaries; also, the total expenditure of every kind in connection with the said canal during each of these months. Presented 4th March, 1909.—*Mr. Perley.. .. ..Not printed.*

99. Return to an address of the House of Commons, dated 22nd February, 1909, for a copy of orders in council, correspondence, letters, despatches, memoranda and communications, between the Imperial and Canadian governments relating to the organization of a Imperial General Staff. Presented 5th March, 1909.—*Mr. Talbot.*
Printed for both distribution and sessional papers.

100. Return to an order of the House of Commons, dated 1st February, 1909, for a copy of all correspondence between the Surveyor General's Department or Department of Indian Affairs and the late Mr. Vaughan, D.L.S., covering his instructions to survey the parish of St. Peters, St. Clements and St. Peters Indian Reserve; together with Mr. Vaughan's correspondence, &c.; of all correspondence between the Department of the Interior and Mr. H. M. Howell, Commissioner to investigate Indian claims on said reserve; of the report of Mr. Rothwell, Law Clerk of the Department of the Interior, on the said St. Peters land claim; of the itemized account of Frederick Heap, of the services rendered during the investigation, and instruction to him from the Department of the Interior and Indian Affairs. Presented 5th March, 1909.—*Mr. Bradbury.*
Not printed.

100*a*. Return to an order of the House of Commons, dated 22nd February, 1909, for a copy of the treaty arranged between St. Peters Indians and the government; and of all correspondence, papers, instructions, and documents relating to the aforesaid treaty. Presented 11th March, 1909.—*Mr. Bradbury.. .. ..Not printed.*

100*b*. Return to an order of the House of Commons, dated 17th February, 1909, showing the number and names of all parties who were entitled to receive patents, and did receive patents, under the treaty made by Mr. H. M. Howell for the surrender of St. Peters Reserve, Manitoba. Presented 12th March, 1909—*Mr. Bradbury.. .. .. ..Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

100*c*. Supplementary Return to No. 100. Presented 5th April, 1909.. .. ..*Not printed.*

100*d*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all papers, letters and correspondence relating to, and an itemized statement of, the account of Mr. H. M. Howell in regard to the surrender of St. Peters Reserve. Presented 27th April, 1909.—*Mr. Smyth*.. .. ..*Not printed.*

100*e*. Supplementary Return to No. 100. Presented 19th May, 1909.. .. ..*Not printed.*

101. Supplementary Convention respecting the commercial relations between France and Canada, entered into at Paris on the 23rd day of January 1909, between His Majesty and the President of the French Republic. Presented 8th March, 1909, by Hon. W. S. Fielding.. .. .. *Printed for both distribution and sessional papers.*

102. Correspondence relating to Supplementary Convention respecting commercial relations between Canada and France. Presented 10th March, 1909, by Hon. W. S. Fielding. *Printed for both distribution and sessional papers.*

103. Return to an order of the House of Commons, dated 22nd February, 1909, for a copy of all evidence, reports, correspondence, writings, papers and documents in possession or control of the Department of Inland Revenue, including all correspondence and written statements between the department or its officials or agents, and the government of Manitoba, or the Attorney General or other officials or agents of that province, in reference to the quality of coal oil sold in Manitoba, and accidents caused by coal oil there during the year 1908, and connected with recent investigations into the cause of these disasters. Presented 8th March, 1909.—*Mr. Schaffner*.. .. ..*Not printed.*

104. Copies of cablegrams between His Excellency the Governor General and the Honourable the Secretary of State for the Colonies respecting the International Boundary Waters Treaty. Presented 8th March, 1909, by Sir Wilfrid Laurier.. .. ..*Not printed.*

104*a*. International Boundary Waters Treaty, signed at Washington, 11th January, 1909, (2) Rider attached by United States Senate. Presented 15th March, 1909, by Hon. W. S. Fielding.. .. ..*Not printed.*

105. Return to an order of the House of Commons, dated 16th January, 1909, showing the number and amount of temporary loans made by the government since 1st July, 1906, the bank or corporation with which each was made, the conditions and cost of the same. Presented 9th March, 1909.—*Mr. Foster*... .. ..*Not printed.*

105*a*. Return to an order of the House of Commons, dated 26th January, 1909, showing the amount and conditions of each permanent loan made by the government since 1st July, 1896, the bank or corporation through which it was made, the cost of each, in (*a*) brokerage and commission, (*b*) stamps, &c., (*c*) legal or other services, and (*d*) discounts, the net result of each loan and per cent of interest upon the same. Presented 24th March, 1909.—*Mr. Foster*.. .. ..*Not printed.*

105*b*. Supplementary Return to No. 105*a*. Presented 31st March, 1909.. .. .. ..*Not printed.*

105*c*. Return to an order of the House of Commons, dated 8th March, 1909, showing what expenses under the following heads: (*a*) bank commission, (*b*) underwriting charges, (*c*) brokerage, and (*d*) advertising, were incurred by the government on each of the following loans, and to whom the several amounts were paid, viz:—

	£ s. d.
1874 loan extended to 1911, 4 per cent..	1,753,830 4 10
1875-8 Public Works guaranteed loan, 4 per cent..	3,200,000 0 0
Loan of 1884, 3½ per cent..	5,000,000 0 0

CONTENTS OF VOLUME 17—*Continued.*

Canada reduced 1885, 4 per cent.. .. .. 6,443,136 2 9
Loan of 1885, 4 per cent.. .. .. 4,000,000 0 0
C. P. R. land grant 1888, 3½ per cent.. .. .. 3,093,700 0 0
4 per cent loan of 1908-12, 4 per cent.. .. .. 1,379,600 0 0
3½ per cent loan 1908, (February issue) 3½ per cent.. .. .. 3,000,000 0 0
3¾ per cent loan 1908, 3¾ per cent.. .. .. 5,000,000 0 0
3½ per cent loan 1908 (October issue) 3½ per cent.. .. .. .. 5,000,000 0 0
3¾ per cent loan 1909, 3¾ per cent.. .. .. 6,000,000 0 0

Payable in Canada—
Reduced loan of 1883, extended 3½ per cent.. .. .. $1,425,800 00

Dominion stock issue—
A reduced in 1897, 3½ per cent.. .. .. 58,899 67
B reduced in 1897, 3½ per cent.. .. .. 325,900 00
C reduced in 1897, 3½ per cent.. .. .. 49,066 34
E extended for 10 years, from 1st July, 1906, 3½ per cent.. 2,500,000 00
Dominion stock issue 1891, 3½ per cent.. .. .. 404,202 00

$5,000,000 for one month; Bank of Montreal, Ottawa; 2nd March, 1909; 4 per cent. Presented 6th April, 1909.—*Mr. Sharpe (Ontario).. .. ..Not printed.*

105*d*. Return to an order of the House of Commons, dated 26th January, 1909, showing, in respect of the sinking fund in connection with each outstanding loan forming on 31st March, 1908, part of the funded public debt: (*a*) term of loan, (*b*) the sinking fund rate, (*c*) the amount that has been each year set aside, including earnings of interest reinvested, (*d*) the aggregate amount to credit of sinking fund of that particular loan on 31st March, 1908, (*e*) the aggregate amount which may be reasonably expected to stand to credit of sinking fund on date when loan shall fall due, and if extended at the end of final period, (*f*) percentage which accrued sinking fund and its earnings will bear to the nominal amount of loan on date of expiry. Presented 6th April, 1909.—*Mr. Ames.. .. ..

CONTENTS OF VOLUME 17—*Continued.*

106*a*. Return to an order of the House of Commons, dated 22nd February, 1906, showing how many acres have already been taken up in Manitoba, Saskatchewan and Alberta, respectively, by homestead and pre-emption, by railway lands, by Hudson Bay lands; by other corporations or persons; by waste, swamps or mountainous land unfit for tilling; by lake areas, including Winnipeg, Winnipegosis, Manitoba, Big Quill, Birch and Beaver; and the area in square miles of each province above named. Presented 11th March, 1909.—*Mr. Hughes*.. .. ..*Not printed.*

106*b*. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all applications, advertisements, tenders, leases, correspondence and papers of every description, with respect to timber berths Nos. 1316, 1317, 1318, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1360, 1361, 1362, 1363, 1364 and 1365. Presented 30th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

106*c*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, communications in writing and documents, to the Minister of the Interior, or any official of the department, and the replies or communications from the minister or any official of the department, since 11th January, 1905, relating to the transfer of certain swamp lands in the Big Grass Marsh, in the province of Manitoba, to His Majesty King Edward VII., for the purposes of the province of Manitoba. Presented 30th March, 1909.—*Mr. Molloy*.. .. ..*Not printed.*

106*d*. Supplementary Return to an order of the House of Commons, dated 3rd March, 1909, showing with respect to leases granted since 30th June, 1896, for timber on Dominion lands in British Columbia, the names and addresses of lessees, the date, term and acreage of each lease, and the bonus received for the same. Presented 5th April, 1909. —*Mr. Taylor (New Westminster)*.. .. ..*Not printed.*

106*e*. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all correspondence, reports, papers, and communications in the possession of the Dominion Lands Office at Prince Albert and the Department of the Interior at Ottawa, in connection with the application for patent for the N.E. ¼ section 10, township 47, range 1, west 3rd meridian of A. A. Strachan, and the performance of his homestead duties. Presented 16th April, 1909.—*Mr. Lake*.. .. ..*Not printed.*

107. Return to an order of the House of Commons, dated 1st February, 1909, showing the total amount received by the Winnipeg *Free Press* from all the departments of the government from 1st July, 1896, to 1st January, 1909, specifying amount each year. Presented 11th March, 1909.—*Mr. Herron*.. .. ..*Not printed.*

107*a*. Supplementary Return to No. 107. Presented 26th March, 1909.. .. .. ..*Not printed.*

108. Return to an order to the House of Commons, dated 26th January, 1909, showing approximately the total amount of available cash on deposit to the credit of the government on the last day of each month during the period between the 1st of April, 1907, and the 31st December, 1908. Presented 11th March, 1909.—*Mr. Ames*.. ..*Not printed.*

109. Return to an order of the House of Commons, dated 26th January, 1909, showing to date the statement found on page 15 of the Budget Speech of 1898. Presented 11th March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

109*a*. Return to an order of the House of Commons, dated 26th January, 1909, showing, in detail, the contingent or nominal liabilities of the Dominion government on the 1st January, 1909; that is to say, a statement of all amounts which might under existing legislation become exigible, such as earnable railway subsidies, government guaranteed loans, deficiencies, which might require to be made good, &c. (Supplementary to No. 105*g*.) Presented 11th March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

110. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence passing between the Department of Justice and the officers of New Westminster Penitentiary or other persons whatsoever, relating to the visit or proposed visit of detectives to Bill Miner during his incarceration in said penitentiary; also of the report of the Inspector of Penitentiaries after investigating the circumstances connected with Miner's escape, and of the evidence on which such report is based; also a copy of telegram sent from the said penitentiary to the department or its officers respecting Miner's escape, and of such telegrams as received and of telegrams sent and received in answer within two weeks from such escape. Presented 12th March, 1909.—*Mr. Taylor (New Westminster)*.. .. ..*Not printed*..

111. Return to an order of the House of Commons, dated 17th February, 1909, showing what amounts the government has paid property owners for damages caused by the holding up of water in the Otonabee River, between Hastings and Peterboro', and the names of the parties receiving settlements. Presented 15th March, 1909.—*Mr. Sexsmith.*

Not printed.

111*a*. Return to an order of the House of Commons, dated 17th February, 1909, showing what amounts the government has paid property owners in or around Stony Lake for damages caused by the rising of water, and who they were. Presented 15th March, 1909.—*Mr. Sexsmith*.. .. ..*Not printed.*

111*b*. Return to an order of the House of Commons, dated 8th February, 1909, showing what measures, if any, have been taken by the government to lower the waters of Lakes Simcoe and Couchiching; what moneys, if any, have been expended for this purpose, the date of expenditure, and persons superintending the same; the future intention of the government in this direction, for the purpose of reclaiming thousands of acres of first-class arable land. Presented 25th March, 1909.—*Mr. Sharpe (Ontario).*

Not printed.

112. Return to an order of the House of Commons, dated 3rd March, 1909, for the production of the original tenders received in reponse to advertisement calling for tenders for the erection of the building at Kingston R. M. C., intended for barracks accommodation, for stables; and also for a Return showing the advertisement and the papers in which inserted; said papers not to be part of the archives of this House, but to be returned by the Clerk to the Department of Public Works after inspection. Presented 15th March, 1909.—*Mr. Edwards*.. .. ..*Not printed.*

112*a*. Return to an order of the House of Commons, dated 3rd March, 1909, for the production of the original tenders received in response to advertisement calling for tenders for the erection of the Veterinary Hospital at Kingston, and also for a return showing the advertisement and the papers in which inserted, said papers not to be part of the archives of this House, but to be returned by the Clerk to the Department of Public Works after inspection. Presented 24th March, 1909.—*Mr. Edwards*.. .. ..*Not printed.*

113. Return to an order of the House of Commons, dated 22nd February, 1909, for a copy of all papers, letters, telegrams and communications, with reference to the complaint against and conviction and fine of F. Macdonald Jacobs, of Caughnawaga Reserve, for cutting cordwood upon territory occupied by him on the reserve, and to have refund of dues or fine. Presented 15th March, 1909.—*Mr. Boyce*.. .. .. ..*Not printed.*

114. Return to an address of the House of Commons, dated 17th February, 1909, for a copy of all correspondence, letters, despatches, memoranda, &c., between the Imperial government, or any member thereof, and the Governor General, government or any member thereof, relating to or bearing upon the question of Canada contributing to the support of the British fleet, or purchasing ships of her own, or assisting in any way in maintaining with the mother country the supremacy of the seas. Presented 17th March, 1909.—*Mr. Worthington*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

115. Return to an order of the House of Commons, dated 22nd February, 1909, for a copy of all reports, memorials, documents and correspondence in possession of the government with regard to the superannuation and to making provision for the superannuation of officers and members of the crew of the winter or ice-breaking steamers owned or in the employ of the government. Presented 17th March, 1909.—*Mr. Warburton.*
Not printed.

116. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence between J. H. Davis and the Department of Marine and Fisheries referring to the fisheries of Manitoba; and of all petitions and correspondence from the Fisherman's Union, Gimli, Manitoba, to and with the said department. Presented 17th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

116*a*. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence or petitions received from F. W. Colclaugh, while he was inspector of fisheries for Manitoba, referring to the operations of commercial companies and others. Presented 29th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

117. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all reports, correspondence, statements, receipts, vouchers and documents of every description with respect to the granting and payment of the railway subsidy authorized under 6-7 Edward VII., chapter, 40, section 1, subsection 16. Presented 17th March, 1909.—*Mr. Ames*.. .. ..*Not printed.*

118. Return to an address of the House of Commons, dated 1st March, 1909, for a copy of all correspondence, documents and papers relating to the construction, or proposed construction, of a line of railway from a point at or near Caledonia to Liverpool, not exceeding 29 miles, referred to in the Acts of 1903, chapter 57, section 23*d*, and all orders in council, reports, contracts, agreements and other papers, relating to the same matters. Presented 18th March, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

119. Return to an address of the Senate dated 3rd March, 1909, calling for a statement showing the imports of oxide of aluminum for the years 1903, 1904, 1905, 1906, 1907, 1908, with value. Also a statement showing the exports of aluminum for the same years, with values. Presented 10th March, 1909.—*Hon. Mr. Domville*.. ..*Not printed.*

120. Return to an order of the House of Commons, dated 1st February, 1909, showing the number of applications made to the Board of Railway Commissioners for the privilege of crossing railway tracks with telephone and telegraph wires and with water mains, each, over the said period from 1st February, 1904, to the 1st January, 1908; the total number of applications granted over said period; the total number of applications refused; the date of each application; the date each application was granted; the length of time from the application to the granting of same; and what time should elapsed before the board should give its decision. Presented 23rd March, 1909.—*Mr. Barr*.. .. ..*Not printed.*

121. Return to an order of the House of Commons, dated 17th February, 1909, giving detailed items of the sum of $10,646.93, being revenue received from Kingston Penitentiary, other than from sale of twine, as shown on page L—36 of the Auditor General's Report, and stating what proportion of such revenue was derived from sales to officers of the penitentiary, with the names of such officers, and the amounts and nature of the goods purchased by them. Presented 23rd March, 1909.—*Mr. Barnard*....*Not printed.*

122. Return to an order of the House of Commons, dated 1st March, 1909, for a copy of all papers and correspondence between the government and the government of British Columbia with reference to the reduction of Indian Reserves in that province, proportionately to the decrease of Indian population as provided for by order in council. Presented 23rd March, 1909.—*Mr. Barnard*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

123. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence, reports and papers of every description treating of or in connection with the application of or grant to Francis Percival Aylwin, of the city of Ottawa, of a tract of land in the province of Alberta for irrigation purposes. Presented 23rd March, 1909.—*Mr. Magrath*.. .. ..*Not printed.*

124. Return to an order of the House of Commons, dated 3rd March, 1909, showing the amounts on deposit in the Government Savings Department on 1st October, 1889, 1st October, 1896, and 1st October, 1897 and 1898; how many officials were employed in connection with the management of this fund in the years 1888, 1890, 1898, 1900 and 1908; the cost of the management of this fund in the years 1888, 1890, 1898, 1900 and 1908. Presented 23rd March, 1909.—*Mr. Sharpe (Ontario)*.. .. ..*Not printed.*

124*a*. Supplementary Return to No. 124. Presented 5th April, 1909.. .. .. ..*Not printed.*

125. Return to an order of the House of Commons, dated 1st February, 1909, showing what operations, including all expenditures, were carried on last year under the fishing leases granted to F. H. Markey, of Montreal, for Great Slave Lake, Nelson and other rivers; J. K. McKenzie, of Selkirk, for Lesser Slave Lake and Arthabaska Lakes; Archibald McNee, for parts of James Bay; Coffey and Merritt, Cedar Lake; The Capital City Packing Company (Limited) and the William Hickey Company (Limited). Presented 24th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

126. Return to an order of the House of Commons, dated 26th January, 1909, showing the names and places of registry of the several American fishing vessels seized by the Dominion fishery cruisers for illegal fishing in Canadian waters since 1900, and of the courts in which action for penalties or forfeitures were instituted, the mode of service of the writs or other process on such foreign fishing vessels, and in what court tried and a statement of the fines imposed, or proceeds of sale realized, and how such fines or proceeds of forfeiture were appropriated; also a copy of the judgment of the High Court of Justice for Ontario in the case of Rex vs. American Gasoline Fishing Boat. Presented 24th March, 1909.—*Mr. Macdonell*.. .. ..*Not printed.*

127. Return to an address of the House of Commons, dated 1st February, 1909, for a copy of all orders in council, reports, correspondence, deeds, conveyances, regulations, conditions and other documents relating to (*a*) the grant or conveyance to the Grand Trunk Railway Company of Canada of a portion of Major Hill Park, so-called, for the site of an hotel, or touching the use or purpose for which the said conveyance was made or proposed; (*b*) the grant or conveyance to the said company or to the Ottawa Railway Terminal Company or to any other person or corporation of any lands in or adjoining the city of Ottawa for the purpose of or in connection with the building of a station at Ottawa or for other railway purposes. Presented 24th March, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

128. Return to an order of the House of Commons, dated 3rd March, 1909, showing how many post offices have been transferred in the province of Manitoba since 1st November, 1908; who the former postmasters were, and who the present postmasters are, with the names of offices; and the reasons assigned for the transfers. Presented 24th March, 1909.—*Mr. Roche*.. .. ..*Not printed.*

128*a*. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all applications, correspondence, reports, documents and papers relating to the establishment and service of a post office at Hand Hills, Alberta. Presented 13th April, 1909.—*Mr. Magrath*.. .. ..*Not printed.*

CONTENTS OF VOLUME 17—*Continued.*

128*b*. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, petitions and reports addressed to the government, or Post Office Department, and all correspondence and orders consequent thereon, relating to the change of the name of the post office of Weymouth North, and of the post office of Weymouth Bridge to Weymouth. Presented 19th April, 1909.—*Mr. Jameson.*
Not printed.

129. Return to an order of the House of Commons, dated 8th March, 1909, showing the names and addresses of the several immigration agents in Canada whose duty it is to locate or settle immigrants upon their arrival in Canada, what salary or remuneration has been paid to each such agent for the fiscal year 1908 and up to the 1st February, 1909, and on what basis they are paid. Presented 25th March, 1909.—*Mr. Macdonell.*
Not printed.

129*a*. Return to an order of the House of Commons, dated 8th March, 1909, showing the names and addresses of the several inspectors of immigrants employed by the government; what salary or remuneration has been paid to each such inspector during the fiscal year 1908 and up to the 1st February, 1909; and on what basis they are paid. Presented 25th March, 1909.—*Mr. Herron*.. .. ..*Not printed.*

129*b*. Return to an order of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, reports and documents between the Department of the Interior and the immigration agents in the United States; and between the Department of the Interior and the colonization societies since the 1st of January, 1908. Presented 30th March, 1909.—*Mr. Paquet*.. .. ..*Not printed.*

130. Return to an order of the House of Commons, dated 15th March, 1909, showing the amounts paid during the years 1903-4, 1905-6 and 1907-8 by the following Departments: (*a*) Marine and Fisheries, (*b*) Railways and Canals, (*c*) Customs, (*d*) Post Office, (*e*) Militia and Defence, and (*f*) Public Works, to the following persons, firms and companies, viz.—The Wilson Gas Buoys Company, the Canadian Fog Signal Company, James Murphy, William R. Blakiston, James Holliday, Allison Davie, J. B. Coté, Adolph Huot, Joseph Samson, Samson & Philion, E. Pelletier, Napoleon Mercier, Severin Martel, Michel Thibodeau, Edmond Belanger & Co., Marie & Themblay, Terreau & Racine, Rock City Tobacco Company, J. N. Martineau, George Marchand, Jean Drolet, Elie Amyot, Charles A. Parent, A. N. Melvin, W. G. Robertson, Wm. Robertson & Co., Howell & Co., St. John Iron Works, Charles McDonald, John A. Moore, Wm. J. Vroom, John A. McAvity Bros., George McAvity, Patrick J. Mooney, Polson Bros. or Polson Iron Works, Merwin & Company, F. L. Brooks & Company, F. S. Brooks, Safety Company, Submarine Company, Wm. J. Allen and Mr. Willard. Presented 25th March, 1909.—*Mr. Sharpe (Ontario)*.. .. .. *Not printed.*

131. Return to an order of the House of Commons, dated 25th January, 1909, showing in relation to each dog-fish reduction plant or establishment for the reduction of dog-fish erected by or for the government or maintained in whole or in part by the government (*a*) the cost of construction, (*b*) the cost of maintenance for each year, (*c*) the location, (*d*) the quantity of dog-fish treated thereat in each year, and (*e*) the amount realized from the sale or disposal thereof in each year. Presented 25th March, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

132. Return to an order of the House of Commons, dated 17th February, 1909, showing the amount of money paid by the government, including all branches of the service, from 1st January, 1897, to 1st January, 1909, to the Logberg Printing Company, Winnipeg. Presented 26th March, 1909.—*Mr. Bradbury*.. .. ..*Not printed.*

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132*a*. Supplementary Return to No. 132. Presented 6th April, 1909.. . . .. ..*Not printed.*

133. Return to an order of the House of Commons, dated 22nd March, 1909, showing the amount of produce of the following lines shipped to Great Britain or other countries in cold storage, or cooled air chambers, during the years 1907 and 1908:—Apples, in barrels or other packages, pears, plums, tomatoes, fresh meat, in pounds, fowl, fish, butter, eggs and cheese; to what country or countries they were shipped, and their condition on landing; the system of cold storage principally in use on the steamships carrying such produce. Presented 26th March, 1909.—*Mr. Sproule*.. .. ..*Not printed.*

134. Return to an address of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, telegrams, papers, reports and valuations of officers or experts, and orders in council, in connection with the purchase, removal and repairing of the dredge *Industry* and parts thereof, including scow, boilers and parts. Presented 29th March, 1909.—*Mr. Foster*.. .. ..*Not printed.*

135. Copy of a letter sent to all officers of the Department of Public Works charged with the purchase of materials and supplies, and the certifying of accounts for same, under the different branches of the chief architect, the chief engineer and the superintendent of telegraphs. Presented 31st March, 1909, by Hon. W. Pugsley.. .. .. ..*Not printed.*

136. Return to an order of the House of Commons, dated 8th February, 1909, showing the Ross Rifles, Mark I. and Mark II., or any other description of Ross Rifle, used by the Canadian rifle team at Bisley last year in the regular team competitions; what Ross rifles of any description were used in the Bisley competitions, regular or extra series matches, by any member of the Canadian team, or any Canadian marksman engaging in such matches; with the name of the individual, and if in the employ of the Ross Rifle Company; the description of the rifle, and in what way it differs from the Ross Rifle, Mark I. and Mark II., both as to length of barrel and such expert accessories as wind gauges, sights, globe or ring, spirit levels, &c., if a target rifle or a service rifle, and if to be adopted by the government for the militia; and where the rifle was manufactured in toto. Presented 1st April, 1909.—*Mr. Worthington*.. .. ..*Not printed.*

137. Return to an address of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, papers, reports, estimates, orders in council, &c., in connection with the surveys of and boring in, and called for tenders for dredging or excavation in the St. John Harbour and Courtney Bay, or either of them, during the year 1908; a copy of the advertisements, names of the papers in which they were inserted, the tenders received and dates, the names of the tenderers and the amount of each tender; which tender, if any, was accepted, the deposit required, and in which bank it was deposited. Presented 6th April, 1909.—*Mr. Daniel*.. .. ..*Not printed.*

137*a*. Return to an address of the House of Commons, dated 10th February, 1909, for a copy of all correspondence, papers, orders in council, advertisements, tenders, contracts, &c., in connection with dredging in the harbour of St. John, New Brunswick, covering the area dredged by Gershen B. Mayes, the Dominion Dredge Company, John Moore, or other parties, during the years 1904, 1905, 1906, 1907 and 1908; the quantities dug under each contract, the amounts paid to each contractor, the date of each payment, and to whom. Presented 11th May, 1909.—*Mr. Daniel*.. .. ..*Not printed.*

138. Return to an order of the House of Commons, dated 1st February, 1909, showing: 1. The total amount expended on public works by this government in the riding of Bonaventure prior to the general elections of 1900. 2. The total amount expended by the government in this riding, (*a*) on public works, and (*b*) in aid of the railways and other undertakings since said general election, and the estimated additional amount

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required, (*a*) to complete these public works, and (*b*) to meet the subsidies or grants in aid of railways or other undertakings. 3. The various public works undertaken by the Government in this riding between the general election of 1896 and the general election of 1900, the dates when the several works were undertaken, whether they were let by public advertisement, tender, and contract, or how otherwise, and the sums of money, stated separately, expended upon these works prior to the election of 1900. 4. Which of these several works were completed and which of them remained uncompleted at the date of the election in 1900. 5. The sums of money, stated separately, expended in or towards completing these works since the said election of 1900, and the dates of expenditure. 6. The various public works undertaken and carried on by the Government since the general election of 1900, the dates when the several works were inaugurated or commenced, the sums of money, stated separately, expended upon these works, and the estimated amount required to complete such of these works as have not been completed; and showing whether these works were done by tender or contract, or how otherwise. 7. The moneys granted by the Government by way of subsidy aid to railways or other undertakings in said riding since the general election of 1900, the sums of money paid under these grants and the estimated amount required to meet future payments. 8. The public works commenced and the money obligations incurred and moneys expended for public works within said riding of Bonaventure during the month of October last. Presented 13th April, 1909.—*Mr. Lennox.. .. .. ..Not printed.*

139. Return to an order of the House of Commons, dated 1st March, 1909, showing the names and addresses of all half-breeds living in the United States who have been allotted scrip since January, 1902, and to whom said scrip was sent or delivered. Presented 13th April, 1909.—*Mr. Bradbury.. .. ..Not printed.*

140. Return to an address of the House of Commons, dated 1st March, 1909, for a copy of all correspondence, orders in council, papers and other documents relating to the disallowance, or application therefor, of an Act of the Legislature of the province of Ontario, intituled: 'An Act respecting Cobalt Lake and Kerr Lake,' being chapter 15 of the Statutes of 1907. Presented 13th April, 1909.—*Mr. Clarke (Essex)..Not printed.*

141. Return to an order of the House of Commons, dated 15th February, 1909, showing: 1. The total mileage of railways authorized to be constructed under charters granted by the Dominion Parliament, between the period from 1888 to 1908, inclusive, exclusive of the Grand Trunk Railway Company, the Canadian Pacific Railway Company, the Canadian Northern Railway Company, and the Grand Trunk Pacific Railway Company. 2. Exclusive of the above named companies, the number of miles actually constructed under said charters. 3. The number of said companies so incorporated. 4. The number of those that have actually constructed any portion of the railway so authorized. 5. The number of said charters which have lapsed. 6. The number granted an extension of time for construction. 7. The number granted two such extensions. 8. The number granted three such extensions or more. Presented 19th April, 1909.—*Mr. Middlebro.. .. ..Not printed.*

141*a*. Return to an order of the House of Commons, dated 17th February, 1909, giving a list of railway charters granted since 1st January, 1900, other than to the Grand Trunk, Grand Trunk Pacific, the Canadian Northern and the Canadian Pacific Railway Companies, showing those whose powers have lapsed, and the length of each of the proposed roads and branches, the date of charters and renewals, if any, the total mileage constructed, the capital stock authorized, subscribed and paid up. Presented 19th April, 1909.—*Mr. Magrath.. .. ..Printed for both distribution and sessional papers.*

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142. Return to an order of the House of Commons, dated 1st March, 1909, showing: 1. At what work the Translation Branch of the House of Commons is employed. 2. The number of permanent translators in this branch. 3. The total amount of salaries paid to these translators. 4. The documents, reports and other matters which have been translated in this branch in the last twelve months, not including the pages already translated in the preceding year and repeated for the purpose of the report, nor the tables already made and translated and repeated for the purpose of completing these reports and documents, which have been most recently translated. 5. The total number of pages translated by the permanent translators. 6. The total number of persons, outside of the Translation Branch, to whom has been given translation work. 7. How much this outside work has cost, and how many pages have been translated in this way. 8. What Blue-books, if any, and other matters, excepting *Hansard*, is translated in other departments other than the Translation Branch of the House of Commons, and in what departments. Presented 19th April, 1909.—*Mr. Boyer.*
Not printed.

143. Certified copy of a Report of the Committee of the Privy Council, approved by His Excellency on the 19th April, 1909.—Regulations of the Civil Service Commission with reference to entrance into and promotion in the service. Presented 20th April, 1909, by Hon. C. Murphy.. .. ..*Not printed.*

144. Return to an order of the House of Commons, dated 25th January, 1909, showing all armouries built since 1st July, 1896, giving situation, cost, capacity, officials employed in each, with yearly expenses of each armoury, distributed under the head of maintenance, improvements, extensions and salaries, with the number of troops actually making use of the same, and to what extent each year. Presented 20th April, 1909.—*Mr. Foster*.. .. ..*Not printed.*

145. Return to an address of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, reports, documents, orders in council, in the possession of the Government relating to the establishment of a Geodetic Service Bureau, and the commencement of a Geodetic Survey in Canada. Presented 20th April, 1909.—*Mr. MacLean (Lunenburg)*.. .. ..*Printed for both distribution and sessional papers.*

145*a*. Supplementary Return to No. 145. Presented 27th April, 1909.
Printed for both distribution and sessional papers.

145*b*. Further Supplementary Return to No. 145. Presented 28th April, 1909.
Printed for both distribution and sessional papers.

146. Return to an order of the House of Commons, dated 17th February, 1909, for a copy of all correspondence respecting the improvements made in the Assiniboia River near Portage la Prairie, in September and October, 1908; and of all papers, vouchers, orders, resolutions, returned cheques, &c., in any way relating to the said work or to carrying out of same. Presented 22nd April, 1909.—*Mr. Staples*.. .. ..*Not printed.*

147. Return to an order of the House of Commons, dated 25th January, 1909, showing the various statistical and special informative publications issued by the several departments of the Government, the number and pages of each, the number and cost of each for the year 1908, the number of persons employed in their preparation, the salaries paid to each person so employed, the number of special employees for engraving or illustrating these publications, and the salaries and expenses of the same, including work and apparatus, the firm or printing company publishing the same, and the amount paid in each case for printing and binding. The above return is not to include the regular reports of the departments, but to be so presented as to show the

CONTENTS OF VOLUME 17—*Continued.*

name of each statistical or special publication, the number of such printed, and the number of pages in each, the number of officials employed in the preparation of the publication, the total cost of each, and the total cost of all such publications for the year 1908. Presented 22nd April, 1909.—*Mr. Foster*.. .. ..*Not printed.*

148. Return to an order of the House of Commons, dated 5th April, 1909, for copies of all correspondence between the Marine and Fisheries Department and any person or persons relative to the concellation of the certificate of Thomas Bibbington, or the removal of his name from the list of certified pilots for the port of Victoria, B.C. Presented 22nd April, 1909.—*Mr. Barnard*.. .. ..*Not printed.*

149. Return to an order of the House of Commons, dated 8th February, 1909, showing all contracts for the carrying of mail, which expire in the month of April, 1909, that have been renewed without asking for tenders; where the routes are situated, the price paid for carrying the mail, and the name of the carrier, and his place of residence in each case. Presented 27th April, 1909.—*Mr. Armstrong*.. .. ..*Not printed.*

150. Copy of an ordinance respecting the hearing and decision of disputes in relation to mining lands in the Yukon Territory. Presented (Senate) 5th May, 1909, by Hon. Sir Richard Cartwright.. .. ..*Not printed.*

151. Copy of an ordinance respecting the imposition of a tax upon ale, porter, beer or lager beer imported into the Yukon Territory. Presented (Senate) 5th May, 1909, by Hon. Sir Richard Cartwright.. .. ..*Not printed.*

152. Return to an order of the House of Commons, dated 11th February, 1909, for a copy of all communications, accounts, reports and other papers received by the Department of Public Works from A. Edgar Hanson, E. T. P. Shewan, or other person or persons, relating to the survey of the St. John River channel between Fredericton and Woodstock, and of all letters, instructions, &c., from the department to Mr. Hanson, Mr. Shewan, or other person or persons in connection therewith. Presented 7th May, 1909. —*Mr. Crocket*.. .. ..*Not printed.*

153. Return to an address of the House of Commons, dated 22nd March, 1909, for a copy of all orders in council directing that repairs be made on different wharfs in the county of Soulanges, a copy of all correspondence, reports, accounts and pay-rolls relating to the valuation of these works, the payment and the list of names of all who were employed as day labourers on these works; a copy of all letters, reports and recommendations exchanged between the Government and all other perons relating to the choice of men to be engaged on these works and those who should be refused employment; a copy of the report of accounts produced by Mr. Alfred Bissonette, wharfinger at St. Zotique, and Mr. Treflé Poirier, wharfinger on the wharfs of the canal and River St. Lawrence, in the parish of Des Cèdres, and of those of Mr. Isaïe Lalonde, son of Albert, farmer, of St. Zotique; a copy of accounts for furnishing wood, iron, cement, sand and stone used in the building of said wharfs, and also a statement of the materials purchased as aforesaid, paid for by the department, and which were not used because they were considered unfit for the building of these wharfs. Presented 11th May, 1909.—*Mr. Lortie*.. .. ..*Not printed.*

154. Return to an address of the House of Commons, dated 8th February, 1909, for a copy of all orders in council, correspondence, papers and other documents between the Government or any member thereof, and any person or persons, referring in any way to the drainage of the Nation River, running through the township of Matilda and Winchester, in the county of Dundas, from the year 1904. Presented 11th May, 1909.— *Mr. Broder*.. .. ..*Not printed.*

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155. Return to an order of the House of Commons, dated 5th April, 1909, showing the amount of money received from the Government by the *Canada Posten* of Winnipeg during the years 1907 and 1908. Presented 12th May, 1909.—*Mr. Bradbury*..*Not printed.*

156. Farming in Canada.—Report of the Scottish Commission on Agriculture in Canada, 1908. Presented 12th May, 1909, by Hon. F. Oliver.. .. ..*Not printed.*

157. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all correspondence and reports respecting the Colonization and Repatriation Society of Lake St. John from 1900 to this date, and a detailed statement of the moneys paid to the society and of the manner in which they have been expended between these dates. Presented 14th May, 1909.—*Mr. Girard*.. .. ..*Not printed.*

158. Return to an address of the Senate, dated 19th March, 1909, calling for copies of all correspondence and documents from the Pacific Cable Board on the working and revenue of the Pacific cable and all information on the subject of a state-owned Atlantic cable and Empire cables generally. Presented 13th May, 1909,—*Hon. Mr. Belcourt*.. .. ..*Not printed.*

159. Return to an address of the Senate, dated 29th April, 1909, for copies of all correspondence between the Honourable Sir Frederick Borden, Minister of Militia and Defence, Mr. Crowe and others, relating to the admission of Newfoundland into the Dominion as a province of the same. Presented 13th May, 1909.—*Hon. Sir Mackenzie Bowell.*
Not printed.

160. Return to an order of the House of Commons, dated 5th April, 1909, for a copy of all documents, complaints, correspondence and decisions arrived at relating to a contract of lease entered into between Alphonse Laberge, lessor, and the Government of the Dominion of Canada, lessee, of date 20th day of July, 1904. Presented 14th May, 1909. —*Mr. Roy (Montmagny)*.. .. ..*Not printed.*

161. Return to an order of the House of Commons, dated 22nd March, 1909, for a copy of all correspondence, tenders and documents in connection with the construction of an ice-breaking steamer for Northumberland Straits, let to Messers. Vickers, Sons & Maxim; also the same in connection with the construction of a lighthouse tender and buoy steamer for the Great Lakes, by Messrs. Swan, Hunter, Wigham & Richardson. Presented 15th May, 1909.—*Mr. Currie (Simcoe)*.. .. ..*Not printed.*

162. Order in Council granting authority for the exemption from payment of the Chinese Capitation Tax in certain cases. Presented 17th May, 1909, by Sir Wilfrid Laurier.
Not printed.

163. Return to an order of the House of Commons, dated 3rd March, 1909, showing with respect to prosecutions since 1906 for violation of postal law, the nature of each offence alleged, the place of residence of person charged, and the result of each trial and penalty imposed. Presented 17th May, 1909.—*Mr. Taylor (New Westminster).*
Not printed.

164. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all reports, specifications, offers, tenders, contracts, alterations of contract, correspondence and documents of every description relating to or in connection with the contract of Thadee Desbiens for an extension to the Chicoutimi pier; and the same in connection with the contract of the General Construction Company, for work done by the dredge *Algonquin* at at near said pier. Presented 18th May, 1909.—*Mr. Ames*....*Not printed.*

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164*a*. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all petitions, reports, specifications, offers, tenders, contracts or papers, of any description in connection with the protection pier at Rivière du Moulin, near Chicoutimi; Saguenay County, P.Q. Presented 19th May, 1909.—*Mr. Ames*.. .. ..*Not printed.*

165. Return to an order of the House of Commons, dated 5th April, 1909, showing how many seining licenses for fishing in Pacific coast waters are now current; to whom they have been granted; the area covered by each license, and how many of these licenses are being operated by the original licensees, and how many by aliens. Presented 18th May, 1909.—*Mr. Cowan*.. .. ..*Not printed.*

165*a*. Return to an order of the House of Commons, dated 8th March, 1909, showing: 1. How many licenses to fish and pack lobsters in the coast waters of Prince Edward Island have been issued by the Dominion Government since 1st January, 1904, to this date, and to whom same were issued. 2. A copy of any petitions, requests, or correspondence received by the Government from any person or persons, or corporations since 1st January, 1904, asking for licenses to fish and pack lobsters in said province. 3. The number of new licenses likely to be issued by the Government during the present year. Presented 18th May, 1909.—*Mr. Fraser*.. .. ..*Not printed.*

165*b*. Return to an order of the House of Commons, dated 5th April, 1909, showing the names of all persons residing in the town of Liverpool, Nova Scotia, or in its vicinity, who were paid fishing bounties in the year 1908, and the names of all persons residing in Liverpool, Nova Scotia, or in the vicinity thereof, to whom seine trap licenses were issued in 1908, and the amounts paid for the same in each case. Presented 19th May, 1909.—*Mr. Crosby*.. .. ..*Not printed.*

166. Return to an address of the Senate, dated 18th March, 1909, calling for copies of all charges,—complaints made by Mr. Joseph Girard or others to the Prime Minister, or any member of the Government, against the Lake St. John Colonization Society. Presented 18th May, 1909.—*Hon. Mr. Tessier*.. .. ..*Not printed.*

167. Return to an order of the House of Commons, dated 8th March, 1909, for a copy of all correspondence, communications in writing and documents from the grand secretary, or any other officials of the Fishermen's Union of Nova Scotia, or any branch or station of the said union, to the Minister of Marine and Fisheries or to any official of the department, and the replies or communications from the minister or any official of the department since the 1st of January, 1907. Presented 19th May, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

168. Return to an order of the House of Commons, dated 13th January, 1908, showing all wharfs, piers, breakwaters, and other public works of a similar character which have been constructed at the expense of Canada, since 1st January, 1897, or for which public money has been voted or appropriated since that date, giving the amount expended or appropriated in each instance, the total cost of each such work, the estimated total cost in each case where the work has not yet been completed, the name of the place where the work is situated, the cost of annual maintenance and upkeep of each such work, and the amount of annual revenue derived therefrom in each instance. Presented 19th May, 1909.—*Mr. Borden (Halifax)*.. .. ..*Not printed.*

169. Return to an order of the House of Commons, dated 8th February, 1909, showing how many hogs have been killed during each month from the 1st of November, 1907, to 1st November, 1908, inclusive, by the following packing companies: the Laing Pack. and Prov. Co., Ltd., Montreal; the Collingwood Pack. Co., Ltd., Collingwood; the Williams Davis Co., Ltd., Harriston; the George Matthews Co., Ltd., Hull; the George Mat-

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thews Co., Ltd., Brantford, the George Matthews Co., Ltd., Peterborough; the Whyte Packing Co., Ltd., Brantford; the Canadian Packing Co., Ltd., London, and the number of hogs condemned, including intestines, during the same period. Presented 19th May, 1909.—*Mr. Beattie*.. .. .. .

SUMMARY REPORT

OF THE

GEOLOGICAL SURVEY BRANCH

OF THE

DEPARTMENT OF MINES

FOR THE CALENDAR YEAR

1908

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1909

[No. 26—1909.] [No. 1072.]

To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, Viscount Howick, Baron Grey of Howick, a Baronet, G.C.M.G., &c., &c., &c., Governor General of Canada.

MAY IT PLEASE YOUR EXCELLENCY,—

The undersigned has the honour to lay before Your Excellency, in compliance with 6-7 Edward VII., chapter 29, section 18, the Summary Report of the operations of the Geological Survey during the year November 30, 1907, to November 30, 1908.

WILLIAM TEMPLEMAN,
Minister of Mines.

Hon. Wm. Templeman,
Minister of Mines,
Ottawa,

Sir,—I have the honour to submit herewith the Director's Summary Report of the operations of the Geological Survey during the year November 30, 1907, to November 30, 1908.

I am, sir,

Your obedient servant,

A. P. LOW,
Deputy Minister.

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SUMMARY REPORT

OF THE

GEOLOGICAL SURVEY BRANCH

OF THE

DEPARTMENT OF MINES

FOR THE CALENDAR YEAR 1908

To Dr. A. P. Low,
Deputy Minister of Mines.

Sir,—I have the honour to submit herewith a summary report on the operations of the Geological Survey for the calendar year 1908.

Organization.

Some slight changes were made in the organization of the Geological Survey during the year.

Committees.

A geological committee has been formed to carefully consider all geological reports, and the geological colouring of maps before printing. The slight delay caused in publication will, it is hoped, be warranted by increased clearness and accuracy.

An editing committee for maps has also been appointed to standardize the maps, settle upon scales, and to critically examine all maps before they are allowed to go to the engraver.

Topographical Division.

A topographer was appointed to have general supervision of the topographical work in the field, and the compilation of this work in the office. The rapid opening up of the country has increased the need for accurate topographical maps, and the development of this part of the 'Survey's' work has reached a stage which makes it desirable to give it distinct recognition. This is secured by the creation of a topographical division under the supervision of a topographer. It is hoped that greater uniformity and accuracy in methods will follow the improvement in the official status and organization of this branch of the 'Survey's' work.

Photographic Laboratory.

The photographic laboratory has been refitted and improved, and the negatives catalogued and filed. All photographic work: including illustrations of the districts

examined and explored, photographs for plotting the topographic work, illustrations for reports and Museum purposes, and map reductions will be done in this laboratory.

Well-boring Records.

Considerable activity is being manifested in deep boring in various parts of the country. The geological information to be gained from the records of such deep bore-holes is extremely important, not only from a scientific standpoint, but also from the economic side. Valuable information is to be obtained regarding conditions bearing on oil, gas, salt, water and other economic problems, consequently it is very desirable that samples of the borings and logs of the wells should be preserved. Such material, systematically collected from all parts of the country, will be invaluable for guiding and directing future operations; since exact information will be available as to the character and thickness of the strata to be penetrated, the economic substances likely to be encountered, the depth to be drilled, etc., thereby enabling the prospective operator to accurately estimate the cost of the proposed undertaking, and the probabilities of success.

To secure such records, and to render this information available to the public, a Well-boring Records division has been formed. The 'Survey' is endeavouring to get in touch with the drillers all over Canada, and is asking their co-operation in making this the valuable information bureau for drillers that it ought to be. Sample bags, log books, etc., are sent to the drillers, which they can return free of charge. With the active assistance in this matter, of that portion of the public which should derive most benefit from it, this should become one of the most useful divisions of the 'Survey' organization.

Changes in Personnel.

Several changes have occurred in the personnel. The 'Survey' lost through death Dr. Robert Chalmers, and by superannuation Dr. Robert Bell and Mr. Charles Willimott. There have been three accessions to the staff.

Special Features of the Work.

In a young and only partially developed country such as Canada, with limited appropriations for exploration service, the energy of the Geological Survey should be almost wholly directed towards assisting in the opening up of the country, and in the exploitation of its natural resources: that is, all its work should have a direct economic bearing. It does not necessarily follow that the scientific side would be neglected; for the economic problems furnish as fruitful scientific results as purely academic studies, and some problems of apparently only academic interest have a most important economic value. But in general only such work should be undertaken as gives promise of affording direct economic results.

Some years ago there was not the same demand for economic work that now exists. The mining public were not as a rule technically trained, and did not realize the practical value of geological work, nor were they prepared to utilize it if they did. Now there is a highly trained body of mining men who recognize the close connexion between geology and mining, and who can make practical use of the geological informa-

tion acquired by the 'Survey.' There is, in consequence, a wide demand for the careful study of districts containing economic minerals, and this assistance the mining public can reasonably ask of the Government. There are two main classes of geological work for the 'Survey' to do: exploratory work, and detailed work. The exploratory work is necessary to furnish the prospector with maps to guide him through the country and to point out the areas where, for certain minerals, prospecting is most likely to be attended with success; the detailed work is useful in assisting in the intelligent development of known mineral-bearing areas. The exploratory work should be done in those districts that are likely to attract attention in the immediate future, and the detailed work in areas that are under active development. The allotment of field parties during the past season was, so far as practicable, in accordance with the above outlined principles.

The field season was somewhat curtailed, owing to the late date at which supplies were voted. The small fund available before this, was used to get out parties going to distant fields, who had to start early to reach the field at all. The rest were forced to await supplies. The number of field parties was limited by the number of officers qualified to take charge of field operations. Most of the parties were numerically stronger than in previous years, a larger number of student assistants being appointed. This served the double purpose of enabling the work to be done more rapidly, and of training a larger number of men to form a corps of trained assistants from whom, in time, men may be drawn for the permanent service, or for supplying the demand by private companies for trained men to direct prospecting work.

FIELD WORK.

The distribution of the parties was as follows:—

YUKON AND MACKENZIE.

Mr. D. D. Cairnes, assisted by Dr. O. Stutzer, was engaged in the Tantalus district near Whitehorse, defining the coal area, with the object of determining the character of the coal and discovering the point nearest transportation where a commercial supply exists. Mr. Matheson had charge of the topographical work in connexion with this investigation.

Mr. V. S. Stefansson descended the Mackenzie and will winter with the Eskimo in the Arctic. The expedition, which is sent out by the American Museum of Natural History and the Geological Survey conjointly, while primarily for ethnological purposes, is expected to add to the geographical knowledge of the Arctic coast. In addition, an endeavour will be made to obtain information regarding mineral occurrences. Mr. Stefansson took with him a set of ore specimens to assist in eliciting information as to ore occurrences from the natives.

Mr. Joseph Keele, who wintered on the divide at the head of the Pelly river, continued his exploration across the continental divide to the Gravel river, and descended this stream to the Mackenzie.

BRITISH COLUMBIA.

Mr. R. G. McConnell spent the season on Texada island in a somewhat detailed geological survey of the northern part of the island. The copper and iron deposits here are attracting attention, and it was in response to an urgent appeal for

a geological survey of the island that this work was undertaken. Mr. F. H. MacLaren was engaged in a topographical survey of the same field, as a foundation for the geological map.

Mr. R. Graham continued the survey of the Pacific coast and inlets begun in 1906 by Mr. LeRoy and continued in 1907 by Mr. Bancroft. The work this season was the section between Kingcome inlet and Bella Coola.

Mr. W. W. Leach continued his explorations in the Bulkley valley near the route of the Grand Trunk Pacific. Coal, copper and lead prospects and the advent of transportation facilities make this field important.

Mr. C. H. Clapp, assisted by Mr. Kenneth Chipman, commenced a survey of Vancouver island.

Some work had been done by the Geological Survey in the Nanaimo coal areas in the 70's. The northern end of the island was studied by Dr. Dawson in 1886, and a few of the inlets of the west coast in 1902, but for the most part the geology and topography of the island is unknown to the Geological Survey. From an agricultural as well as from the mining standpoint the island is rapidly increasing in importance, and it was decided to begin its systematic survey. Mr. Clapp made a start at the southern end of the island as affording the most favourable opportunities for geological investigation.

Mr. John Macoun, naturalist to the 'Survey,' assisted by Mr. W. Spreadborough, was engaged in making a representative collection of the fauna and flora of the island for the new Museum. Mr. C. H. Young, one of the preparators of the 'Survey,' was stationed at Nanaimo mounting the fresh specimens. Mr. Macoun was also instructed to visit the Rossland mines for the purpose of studying the fungi whose growth in mine timbers causes their rapid destruction, entailing a heavy expense upon the mines. The object of this investigation was to discover if possible a cheap and effective method of preventing their growth. On a subsequent page will be found an account of a cheap method of preserving the timbers, kindly furnished me by Mr. Watson, —one of the visiting British Engineers—with whom I discussed the problem.

Mr. Charles Camsell completed his detailed study of the Hedley mining camp, and began a survey of the Tulameen district. The latter is unique in that it is the only district in Canada where platinum gravels have been worked on a commercial scale. Railway facilities for this section are projected, and with the solution of the transportation problem it is expected that this portion of the country will be actively developed. The present work is in anticipation of this.

Mr. L. Reinecke was engaged in the topographical surveying of the districts examined by Mr. Camsell.

Mr. W. H. Boyd was employed on a detailed survey of the Phœnix camp. At the close of the season he made a hasty examination of the Slocan district to outline a plan for its survey next season.

Mr. O. E. LeRoy made a detailed investigation of the Phœnix camp and its ore deposits. After finishing this he spent a month on the underground geology near Sandon.

ALBERTA.

Mr. George Malloch made a geological and topographical survey of the Big Horn coal area on the Brazeau river. Coal in quantity, and of exceptional quality is found here.

ALBERTA AND SASKATCHEWAN.

Mr. Dowling was engaged in investigating the coal supply of various portions of Saskatchewan and Alberta.

SASKATCHEWAN AND KEEWATIN.

Mr. W. McInnes spent the season on surveys from Lac la Ronge down the Churchill to South Indian lake. The prospect of a railway to Hudson bay has created a demand for information concerning this north country and its mineral possibilities. The 'Survey' had no information concerning this section of the Churchill, although the upper and lower portions had been explored. To fill the gap this work was undertaken. Reported discoveries of valuable minerals at Lac la Ronge made exploration of that region important.

KEEWATIN.

Mr. Owen O'Sullivan completed the instrumental survey of the shores of Hudson bay. A section of 250 miles remained undone, and as so much interest now centres round Hudson bay it was deemed advisable to complete its survey.

ONTARIO.

Mr. A. W. G. Wilson spent the field season about Lake Nipigon, completing the geological work necessary for the map of this region, which the National Transcontinental railway will open up.

Mr. W. H. Collins made a geological examination of the upper part of the Montreal river. The lower portion of this river received much attention from prospectors last year, and this exploration was undertaken to secure geological information regarding the upper country before it would be required by the advancing prospectors.

Mr. W. A. Johnston continued work on his Simcoe sheet in southern Ontario.

Mr. F. B. Taylor and Mr. Goldthwait, who have been for some years working on the superficial geology and the history of the Great Lakes region for the United States Geological Survey and for State surveys, extended their studies into Ontario under the auspices of the Canadian Geological Survey. Mr. W. A. Johnston co-operated with them in this work.

Mr. E. D. Ingall spent the field season in the gas and oil region of southern Ontario, obtaining information for a new map of the productive districts.

QUEBEC.

Mr. M. E. Wilson, who had been studying the country east of Lake Timiskaming during the past two seasons, was this year engaged in extending this work northward. Considerable prospecting is being done in this region, east of Larder lake, on the Quebec side of the Interprovincial line.

Mr. W. H. Boyd, with a party of topographers, spent a few weeks on a map of St. Bruno mountain, required for Mr. Dresser's report on the geology of this old volcano.

Mr. J. A. Dresser, in the early spring, examined the recent gold discoveries in Megantic, and issued a preliminary report on this field. Mr. E. R. Faribault also visited this district and contributed a sketch map for the report. Mr. Dresser's main field work was along the National Transcontinental railway in eastern Quebec, which will open up a district about which we could furnish but meagre information to the numerous inquirers.

Mr. R. W. Ells investigated and reported on the landslide at Notre-Dame de la Salette.

Mr. W. McInnes, and later Mr. H. M. Ami, made brief visits to Bergeronnes, on the lower St. Lawrence, to examine the condition of the clay banks in its vicinity, as the inhabitants were in some apprehension of slides.

NEW BRUNSWICK.

Mr. G. A. Young was occupied during the field season in a detailed survey of the Bathurst district. The iron ores of this district are receiving attention, and the 'Survey' has been petitioned to make a detailed study of the local geology.

Mr. R. W. Ells spent the early part of the season in Scotland, examining the oil shales, and oil shale industry.

Mr. Lawrence M. Lambe, vertebrate palæontologist, was engaged in collecting vertebrates in New Brunswick and Nova Scotia, chiefly in Albert county, N.B., and Kings county, N.S., to secure palæontological evidence regarding the geological ages of the formations believed to be, or which might possibly be, Devonian. In the Maritime Provinces, where economic materials, such as coal, occur in definite geological horizons, such data is of great economic value.

Mr. W. J. Wilson made collections along the bay of Fundy: paying special attention to plant remains.

NOVA SCOTIA.

Mr. Hugh Fletcher continued work on the map sheets of parts of Cumberland, Kings and Annapolis counties.

Mr. E. R. Faribault was engaged in extending the surveys on his map sheets in Lunenburg county and Kings county, covered by the Gaspereau River, New Ross and Chester Basin sheets.

Mr. H. M. Ami spent a portion of the summer in Antigonish, establishing the horizon of rocks near Big Marsh, which had been mapped as Lower Carboniferous. The presence of bituminous shales (which in places pass into coal) in these rocks had led a number of locally interested people to question the accuracy of the previous determination. Mr. Ami also collected fossils from several Nova Scotia localities.

PRINCE EDWARD ISLAND.

The work of the Geological Survey in Prince Edward Island took the form of deep-boring operations to determine the depth at which the Coal Measures occur, and if possible to prove the presence or absence of coal seams within working distance of the surface.

SCIENTIST FOR ARCTIC EXPEDITION.

Having been requested by the Department of Marine to nominate a man as scientist to accompany the Arctic expedition, Mr. J. McMillan was selected, and assisted with instruments, etc., for this interesting work.

MUSEUM.

Preparations are being made for a worthy exhibit when the new Museum is occupied. As time permits, the collections in the present Museum are being overhauled, and additional specimens and collections procured. Arrangements have been made whereby the collection of British Columbia minerals which will be exhibited in the forthcoming Seattle exhibition will be permanently lodged in the new Museum.

PUBLICATIONS.

The growing demand for the publications of the Geological Survey makes it necessary to enlarge the editions printed, and to reprint some of the maps and reports already issued. This increased interest is shown by the fact that, the publications distributed during the past year were more than double those of the previous year. Public libraries which have hitherto not had Geological Survey publications have applied for and been supplied with sets of the reports. A number of sets have been sent to mining centres as neuclei of scientific libraries which are being established by the Canadian Mining Institute for the convenience of prospectors and mining engineers.

One of the most serious difficulties in the way of securing full effectiveness is, in getting the individual reports into the hands of those who would find them of interest and value. There being no profit in handling them, tradesmen will not distribute them. Wherever a provincial or federal government agent or public spirited citizen will undertake to place them in the proper hands reports of local interest are sent them for distribution. Bulletins announcing the 'Survey' publications are sent from time to time to newspapers, and a page has been secured in a mining journal to announce the 'Survey' publications.

The knowledge of the work of the 'Survey,' and of the mode of obtaining publications is spreading, necessitating the printing of larger editions of maps and reports; but a large portion of the population that would be interested in securing the information published is still in the dark regarding the 'Survey' reports and how to secure them. The 'Survey' has been at work for a great many years, and the information, particularly regarding the older districts, is often scattered through a large number of reports. There is a great need for general reports on larger districts, which will bring together and summarize this accumulated information, and general reports or bulletins bringing together all the information regarding the occurrences in the Dominion of individual economic products. This want is alleviated to some extent by the full and complete index to the reports of the Geological Survey (1885-1906) which was

issued in 1908, but the general reports are still urgently needed. A large proportion of the inquiries received are for such general information. A small beginning has been made towards supplying this deficiency. An officer has been appointed to compile such reports. Under Mr. Faribault's direction a general report on the gold-bearing rocks of Nova Scotia is first being prepared, and a brief summary of the Geology of Canada will, it is hoped, shortly be issued.

Library.

An effort is being made to make the scientific library more complete and representative. This library is open to the scientific public, and still greater use will probably be made of it when it is housed in more commodious and attractive quarters in the new building.

Now that no annual volume is published except the Summary Report (the individual reports appearing as separates), it has been decided to maintain two distributing lists: (1) an exchange list, on which will be placed public libraries and institutions publishing scientific reports; and (2) a notice list of private individuals who desire to be kept informed of 'Survey' publications. All reports and maps issued will be sent to addresses on the former list; to the latter, notices of all publications as they are issued, and such publications as are requested therefrom.

This change is made necessary on account of numerous changes of addresses of private individuals, and on account of the fact that only a portion of the reports issued are of interest to any one person.

Educational Material.

The cabinets of representative Canadian rocks and minerals prepared for the more advanced schools and colleges are being eagerly sought after. The great interest now being aroused by the rapidly expanding mining industry, and the attention given to nature study in the schools, has created a demand for this educational material that overtaxes our facilities to supply. Colleges, finding difficulty in obtaining Canadian material, also frequently apply for large collections of Canadian specimens, which we at present have not the means of preparing. A large number of requests are received for samples of Canadian ores and minerals, from private individuals who are interested in Canada's mineral resources. As a result of the mineral exhibit in the Canadian section of the Franco-British Exhibition in London, a large number of requests are also coming in from British schools whose scholars are looking towards the 'dominions beyond the seas,' as their possible future home. Collections could be very advantageously placed in these schools. In our present quarters facilities which would enable us to meet these educational demands cannot be provided, but when moved to the new building our work along these lines should be greatly enlarged. This branch of educational work need not be confined to minerals and rocks. Fossils, woods, plants, animals and photographs are also much sought after for educational purposes, and these could be most easily and most cheaply supplied by the 'Survey.' In the matter of photographs, for example, the 'Survey' has thousands of good negatives from all parts of Canada, illustrating the character of the country, geological phenomena, the rocks, mining camps, agricultural resources ,forests, trees, etc. From these, illustrative collections for educational uses could be readily prepared.

Ethnology.

In the new Museum one of the most popular sections is likely to be the ethnological exhibit. Very little investigation has been made in Canada of the native races, and what has been done has mostly been under the auspices of foreign institutions. The opportunities for such studies are fast disappearing. Under advancing settlement and rapid development of the country, the native is disappearing, or coming under the influence of the white man's civilization. The older people who are familiar with the folk lore or traditions of the tribe are dying off, and the rising generation under the changed conditions is acquiring a totally different education.

If the information concerning the native races is ever to be secured and preserved, action must be taken very soon, or it will be too late. It is a duty we owe to the Canada of the future to see that such material is saved.

The work on the Eskimo of the Arctic, undertaken this year in conjunction with the American Museum of Natural History, is hoped to prove only the beginning of a serious effort to acquire the valuable ethnological data that is yet to be had.

Co-operation.

In many branches of the work, co-operation with the provinces is highly desirable, and during the year efforts have been made to get into closer touch with the various provincial departments. One line in which co-operation might be effective is in the topographical work. A contoured topographical map, while necessary for a proper representation of the geological features of a district, is also almost indispensable from a provincial standpoint, in the development of its natural resources, and the study and carrying out of all engineering projects. It promotes an exact knowledge of the country. It can be used for planning engineering works. Highways, electric roads, railroads, aqueducts, and sewage works, may be laid out on such maps, saving the time and expense of preliminary surveys. They afford accurate information as to the relations of boundaries and towns to natural features. They are useful as base maps for the graphic representation of facts relating to population, industries, and other statistical information, and to show the location, extent and accessibility of lands, forests, water supply and economic minerals. For such mapping, that is of equal benefit to Dominion and province, and that is of such immediate importance to both, co-operation is desirable, as it would hasten and facilitate the work.

In spite of repeated efforts to overcome the difficulties in the way of a speedy publication of the reports after the field work has been finished, vexatious delays still occur. A report often loses a great part of its usefulness unless it reaches the public soon after the facts have been collected, particularly if it relates to a district that is under active development. Under the most favourable circumstances a considerable time must elapse before it can appear.

Few, who have not had to do it, recognize the amount of labour that is entailed in the preparation of a scientific report which is to have official accuracy, for a hasty report is of little service, if not harmful. It is hoped, however, that improvements may be made which will make possible the more speedy presentation of the facts secured by the operations of the 'Survey.'

The investigation of the water resources of the Dominion is becoming more and more pressing. In Central Canada information regarding the distribution and amount of water-power is urgently needed. In the North West provinces the problem of a water supply is one of the most serious in connexion with the settlement of the country. The Geological Survey, in accordance with the Mines Act, has been entrusted with the investigation of water supply and water resources, and provision must be made for systematic work in this field.

Disabilities Under Which Officers Labour.

Field officers of the 'Survey' have, as a rule, to labour under serious handicaps, which greatly lessen the value of their work. In many cases they have no accurate maps on which to lay down the geology in the field, the topographical and geological work being done concurrently. This interferes with the accurate delimitation of geological boundaries; it often prevents the geologist recognizing in the field where his information is weak, and it prevents his seeing relationships that should be investigated, until his return to the office, when it is too late; for the geologists seldom get back to a field to revise their maps before publication. It is expected that this condition will be remedied when the topographical division is developed, so that instead of working with a geologist, the topographer will be sufficiently in advance to be able to furnish a map of the field before geological work commences.

Another handicap is in rarely having an opportunity in the field of consulting with a colleague upon the critical points in the geology of his district. To have to demonstrate the geology to another would throw new light upon the problems, bring out new facts and new viewpoints, and serve as a check upon the work. An effort will be made to supply such assistance wherever possible.

Inadequate Accommodation.

The 'Survey' has long since outgrown its present quarters. The congestion is such that not only is it impossible to display or store further Museum material, but it is also impossible to properly carry on the office work in connexion with maps, reports and the various materials brought in for investigation. It is hoped that the new Museum will be far enough advanced next year to admit of at least partial occupation. When in the commodious quarters which the new building will provide, a marked increase in the usefulness and efficiency of the 'Survey' will be possible.

Salary Question.

To cope with the growing demands occasioned by the rapid opening up of the country a large increase in the staff of the 'Survey' is absolutely necessary. But before this can be successfully made, it is required to put the technical staff on a more satisfactory footing in regard to salary. The technical officers have always been underpaid, but at present the conditions are more acute than hitherto. For the proper prosecution of the work, only picked, well trained, expensively educated men can be successfully employed. They should properly have seven years of college training (graduate and post graduate), and in addition, wide experience in the field. Such men are keenly sought after by colleges, by foreign and other surveys, and private companies, who are willing to pay much higher salaries than are obtained in the Geological Survey Branch of the Department of Mines.

Formerly, when the cost of living was much less, when there was no outside demand for the type of men required by the 'Survey,' and when a permanent position carried with it superannuation privileges, the need was not so pressing. In the United States Geological Survey the salaries range from $6,000 down: most of the responsible officers receiving from $4,500 to $3,000—nearly double the salaries on the Canadian Geological Survey. Notwithstanding the higher salaries, the United States Geological Survey finds the basis still too low to retain its men in the face of the outside demand, and steps are being taken to improve the conditions for them in the service. The Provincial governments, whose salaries are uniformly lower in other lines, do better in regard to such technical employes than the Dominion Government.

The Canadian colleges, as a rule, pay much better salaries, and in addition their men are free for four or five months of the year, and are at liberty to do private professional work, or to become financially interested in mining. The stamp of man required by this 'Survey' for responsible work is equal to that required for a chair in a university.

It is evident that on the present salary basis the 'Survey' cannot compete. Not only will it not attract the class of men required, but it will lose its effective men, who will be picked up by outsiders as fast as they demonstrate their capabilities, and the 'Survey' will be officered and manned by the 'culls.'

An efficient Geological Survey staff will be one of the most powerful instruments in the hands of the Government for opening up the country; through its assistance in discovering, making known and developing the natural resources. An inefficient organization will be worse than none at all.

Economy as well as efficiency demands that quality in the officers should alone be considered, and not the price which must be paid to secure it.

WORK OF THE DIRECTOR.

The greater portion of the year was spent upon executive work in the office, which demands no notice. Reference may, however, be made to some special work.

On December 25, I left for Alberquerque, N.M., to attend the meeting of the Geological Society of America. A short excursion was made to the Sandia mountains, the petrified forest of Arizona and the Grand Cañon of the Colorado. On February 8, on my invitation, a meeting of Canadian geologists was held in the Redpath Museum, Montreal, for the purpose of arriving at an agreement as to how the Pre-Cambrian rocks, developed in Canada, should be interpreted on the map of North America in course of preparation by Mr. Bailey Willis for the United States Geological Survey. After a thorough discussion a scheme of classification was drawn up and unanimously adopted.

On February 21, an International conference was held at Chicago to discuss the same subject. Messrs. T. C. Chamberlain, C. R. Van Hise and Bailey Willis represented the United States Geological Survey, and Messrs. F. D. Adams, W. G. Miller and the writer represented the Canadian Geological Survey and the Ontario Bureau of Mines. It was decided that for the representation of the Pre-Cambrian of Canada on the map of North America, the scheme of classification agreed upon at the meeting of Canadian geologists would substantially be followed.

The annual meeting of the Canadian Mining Institute was held in Ottawa, the first week in March, which enabled the Geological Survey to take a more active part in the proceedings than is usually the case.

On the invitation of the Mining Society of Nova Scotia, I also attended the annual meeting of that society, held in Halifax the last week in March.

MINERAL PROSPECTS IN EASTERN ONTARIO.

On May 29, a copper showing in the township of Lavant, V, 10 and 11, was visited. The ore occurs in dolomite along its contact with an intrusion of reddish granite. Along the contact zone the dolomite has suffered more or less contact metamorphism, green silicates (hornblende, etc.) being developed, and in places considerable chalcopyrite.

The granite here forms the western wall of a valley in the bottom of which a gabbro-diorite (field name) outcrops. On the eastern slope crystalline limestone is further exposed, somewhat silicified and otherwise altered. Along joint planes and fractures of this limestone, tetrahedrite in narrow stringers has been found. This copper-bearing mineral, while rather common in the silver lead districts of western Canada, is exceptional in the east.

While the body of ore exposed in this locality is not of sufficient magnitude to have any great economic importance, it suggests that in eastern Ontario the granite contacts, especially along limestones and dolomites, may be worth prospecting.

The copper deposit of Eldorado, Hastings county, which has been developed with some success, is also a contact metamorphic deposit on a granitic contact, although it is marked by a notable development of magnetite, and its oxidized surface, which was altered to hematite, caused it to be first worked as an iron ore.

Many of the iron, as well as other ores of eastern Ontario are also contact metamorphic deposits, so that the invaded and altered rocks of these contacts would seem to be favourable ground for prospecting. The extent to which green lime-silicates are formed along the contacts, or along fissures in the lime rocks near the contacts, somewhat masks the relationship between the limestone, the ores, and the intrusive rock; the green metamorphic product being sometimes mistaken for an altered dike of diorite or similar rock, or where foliated, for a band of green schist.

COBALT CONGLOMERATE.

Two days were spent, at the end of July, in visiting Cobalt, with Professors Chamberlain and Salisbury, of Chicago University, and W. G. Miller, the provincial geologist of Ontario.

The Huronian conglomerate of this district has a strong resemblance to a glacial till, but while this resemblance has been pointed out in official reports of the Bureau of Mines and the Geological Survey, the opinion was expressed that there was no evidence pointing to its glacial origin, while there was a mass of negative evidence against such a theory. As the glacial origin of these conglomerates has been strongly advocated, Messrs. Chamberlain and Salisbury, who are specialists in glaciology, graciously accepted the invitation of Mr. Miller and myself to examine typical occurrences of the rock in the Cobalt district. After two days examination the opinion

formed was that, while many of the pebbles resemble glacial pebbles and while some portions of the rock simulate, exactly, glacial till, the position taken by the Geological Survey and the Bureau of Mines with regard to the question of the origin of this rock was correct—there is no evidence to prove its glacial origin, there is a great deal of negative evidence against it—and that the burden of proof must rest upon those who suggest its glacial origin.

PRINCE EDWARD ISLAND.

The first week in August was spent in Prince Edward Island completing arrangements for the boring operations to test the coal, gas and oil possibilities of the island, details concerning which will be found on a later page.

OFFICIAL VISIT OF THE HONOURABLE THE MINISTER OF MINES TO SOUTHERN BRITISH COLUMBIA.

On August 14, I accompanied the Hon. W. Templeman, Minister of Mines, on an official visit to some of the chief mining camps of southern British Columbia.

FRANK AND COLEMAN.

The first stop was made at Frank. The surface works of the Canadian American Coal and Coke Company were visited. Active work was suspended, but steps were being taken to renew operations.

The Hillcrest collieries, with a daily output of about 600 tons, the Belleview collieries, with 800 tons, and the International Coal and Coke Company collieries, Coleman, with daily capacity of 2,500 tons, were also visited. Time did not permit a visit to the Lille collieries, or other coal properties in the vicinity of Frank. A cement plant of the Rocky Mountain Cement Co., of 1,000 bls. capacity, was under course of construction near the lime kilns at the Gap. Turtle Mountain limestone and clay will be used for cement making.

HOSMER.

The next point visited was Hosmer, where the new modern surface plant designed to handle an output of 4,000 tons of coal was inspected.

FERNIE.

A day was spent at Fernie, and at the extensive collieries of the Crow's Nest Pass Coal Company on Coal creek. At the time of our visit mining was curtailed on account of damage done to No. 2 colliery by a severe bump, and the destruction of Fernie by forest fires, both misfortunes having occurred only a fortnight before. The extensive battery of coke ovens at Fernie (426 old ones and 50 in course of construction) were put out of commission by the burning of the slack bins, trestles, etc.

The fine courage and confidence of the citizens of Fernie was well shown in the face of this almost overwhelming disaster, for not only had they already recovered from the shock, but rebuilding was in progress all over the old townsite. In the evening a successful smoker was given by the citizens, at which the only suggestions of recent

disaster were furnished by fire-marked clothes, and the presence of insurance underwriters.

CRANBROOK.

A brief stop was made at Cranbrook, where the Board of Trade, after discussing with us the pressing need of geological work in East Kootenay, tendered a banquet to the Minister of Mines.

MOYIE.

A day was next spent at Moyie inspecting the St. Eugene mine and mill, of the Consolidated Mining and Smelting Company. Recent development work on this great lead mine has been most encouraging. Particularly important discoveries have been made on so-called avenues (inclined veins connecting the two main parallel veins), and on the deeper levels of the mine. One shoot on 4th avenue has a width of about 40 feet, almost 20 feet of which is crude ore. More ore is now in sight than at any other time during the last few years. Changes have been made in the concentrating mill, enabling the feed to be treated several times, thereby increasing its efficiency by diminishing the losses. About 500 men are employed at this property. Favourable reports were given us regarding the development being done on the Aurora claim, across the lake from the St. Eugene, but time did not permit a visit to this property.

NELSON AND YMIR.

From Moyie we proceeded to Nelson. From Nelson a trip was made to Ymir, where the Ymir mine was visited. This, with its extensive equipment, including an 80 stamp mill, was formerly a larger producer, but at present work is confined to development. The main workings are on a large lens-shaped ore shoot about 500 feet long and 30 feet wide, which was continuous downward for 500 feet. There gangue began to become prominent, but rich pockets continued for several hundred feet, the gangue, however, gradually increasing. At 1,000 feet in depth the ore was confined to streaks. At the east end of this ore shoot it seems to gradually peter out, but the west end may be cut off by a fault, although I understand that what is thought to be the same fissure has been traced on the surface for several thousand feet without finding another body of ore. The second level has been drifted on for 250 feet west of the dike, and then a cross-cut 800 feet long has been made into the hill. At this point broken ground is encountered, and a drift run along it with a raise on a bunch of ore.

On the surface above the outcrop of the producing vein a large amount of rich float has been found, which must have originated in a second vein; but extensive prospecting has failed to discover this lead. The float would appear to indicate a point of origin near the edge of the main ore shoot block, about in line with the ore at present being worked at the end of the long cross-cut in the second level.

Although a good deal of prospecting has been done on the property it has been chiefly to test the ore shoot at depth, and a considerable amount of very promising territory still awaits exploration. The ground west of the ore shoot, beyond the probable fault, has been tested only by the drift on the second level and the long cross-cut. No cross-cut in the opposite direction has yet been made and no cross-cuts have been run from the main shoot to test for parallel ore bodies. The rich float up the hill,

and the frequency with which parallel veins and ore shoots occur in southern British Columbia, renders such exploratory work a promising venture. This ground should be tested, for the Ymir mine has been one of the prominent dividend payers of the West Kootenay district.

A visit was made to the new electric zinc smelter at Nelson. The plant was not quite completed, but it was expected that it would be ready for trial runs during the autumn.

BLUE BELL MINE AND KASLO.

A trip was made from Nelson to Kootenay Lake points: Ainsworth, Bluebell and Kaslo being visited.

The striking feature of the Bluebell is the large size of the ore shoots. The ore occurs in a limestone band between schist walls. The ore consists of lead, zinc, and iron sulphides, which replace the limestone, sometimes mixed with one another and sometimes segregated into fairly clean masses of a single sulphide. Several dikes occur almost completely altered (apparently largely by kaolinization). The ore is confined to the limestone, except along the dikes or fractures, along which it may extend a short distance into the schist walls. In form the ore occurs in large chimney-like shoots which may reach a width of almost 100 feet. The main buildings and mill are well laid out, unusual attention having been given to the comfort of the men. The mill employs ordinary water concentration. The ore contains a considerable proportion of zinc, and an effort is being made to utilize the zinc middlings, for which a small roaster and magnetic concentrator are being installed.

A dinner tendered to the Minister at Kaslo, afforded an opportunity of becoming acquainted with Slocan miners and their problems.

TRAIL AND ROSSLAND.

A day was spent at Trail visiting the copper-lead smelter and refinery. A new steel furnace-room was in course of erection. A huge new copper furnace was in successful operation, and it is planned to enlarge one of the smaller furnaces to even greater proportions. The lead refinery was turning out about 60 tons of lead a day.

BOUNDARY DISTRICT.

From Trail we proceeded to Rossland and spent a day visiting the mines. The following day we reached Grand Forks, and were shown through the Granby smelter. It is now equipped with eight furnaces and a converter plant, and can treat 3,500 tons of Boundary ore per day. One of the furnaces was being lengthened by four feet, and each in turn will be so altered. When this is effected, the plant will be able to handle 4,500 tons daily, which the mines of the Company at Phœnix are prepared to supply. These mines were visited next day. Here we also met the Geological Survey parties at work under Messrs. LeRoy and Boyd.

A stop was also made at the British Columbia Copper Company's smelter at Greenwood, where with three furnaces and a converter 2,000 tons of ore are treated daily.

SIMILKAMEEN.

From Greenwood we went to Keremeos, and thence by stage to Hedley, where a day was spent at the Nickel Plate mine and in the mill of the Daly Reduction Com-

pany. Mr. Camsell's party was met at this point. From Hedley we returned to Penticton and reached the main line of the Canadian Pacific railway at Sicamous, thence proceeding to Vancouver and Victoria.

At all points visited the mining men showed their appreciation of the recognition of the mineral industry by the creation of a Department of Mines, and emphasized the pressing need of greatly enlarging the activities of the Geological Survey.

MINING ENGINEERS' EXCURSION.

From Victoria I returned to Winnipeg to meet the excursion of continental mining engineers who were visiting the leading mining centres of Canada, under the auspices of the Canadian Mining Institute. It was at first proposed to limit the excursion to the eastern portion of Canada, and a grant of $3,000 was asked from the government to help defray the cost of the undertaking. At the suggestion of the Minister of Mines, the scope of the excursion was enlarged to embrace the western half of Canada as well as the eastern, and the grant of the Dominion government was increased to $10,000. The excursionists assembled at Quebec and first visited Nova Scotia, where particular attention was given to the iron and coal industries of the Province. Returning from Nova Scotia the chrome and asbestos regions of Quebec were examined. After seeing Montreal, Toronto and Niagara, the visitors were conducted through the Cobalt camp, Timagami, the Moose Mountain Iron Range and the Sudbury district. I joined the party at Winnipeg and remained with them throughout their western tour. The first stop was at Medicine Hat, where the natural gas wells were examined. From here the route lay through the Crowsnest pass and Southern British Columbia, where the leading camps and mines were visited. Two days were spent at Victoria, and a visit was paid to the Ladysmith smelter, and the collieries and powder works at Nanaimo.

A day was spent at Vancouver, and the return journey was by way of the main line of the Canadian Pacific railway, with a stop over at Banff to visit the Bankhead mines, and another at Calgary to get a glimpse of ranching on the plains.

The excursion was a success from every standpoint. About fifty availed themselves of the opportunity, though all were not able to take time for the whole trip. Representatives from the prominent mining societies of Germany, Belgium, Great Britain, and the United States took part in the excursion. Among them were some of the leading mining engineers of the continent, most of whom were visiting Canada for the first time. It was generally agreed by those who had the pleasure of meeting them that they were the finest body of business men who have yet visited this country, and they spared themselves no time or trouble to learn all that could be acquired under the circumstances. The arrangements for seeing the utmost within the time, and the facilities afforded for acquiring first-hand information were excellent.

Good results are sure to follow from this visit. The papers by such authoritative writers, published as reports to the societies they represent, on mining in Canada, will do much to call the attention of Europeans to our mineral resources, and to give them a correct idea as to our mining conditions and possibilities.

One of the most valuable results is that a number of leading mining men of Europe have become interested in this country, and now know how to secure informa-

tion concerning mines and mining districts, when desired. Already the practical effects are seen in the inquiries received from abroad for men for special examinations of mining properties. Invaluable suggestions were made by the engineers, many of them specialists in certain branches, that will be found extremely valuable to operators here; and on the other hand, some new ideas were acquired by the visitors from our mining practice.

The main impressions made upon the visitors were the extent of our territory; the scale and magnitude of the operations in the districts at present accessible; the rapidity with which a district is developed as evidenced by Cobalt, and the industries along the Crowsnest Pass railway, which were practically non-existent a decade ago; the modern plants and methods and the calibre of the men at the head of the successful properties.

The magnitude of the operations of the Dominion Coal Company, the richness of Cobalt, the extent of the nickel-copper industry of Sudbury, the immense coal resources of the Crowsnest pass, the Trail smelter with its ingenious lead refinery, the first of its kind in the world, and the labour-saving appliances of the Granby mine and smelter were among the most striking and interesting features noted by the visitors.

The following excerpts are from a series of articles written by the secretary of the Mining Institute of Scotland, one of the distinguished guests who took part in the excursion:—

'The excursion gave rare opportunities to those from Scotland of getting not only a general idea of the external features of Canada from sea to sea, but of acquiring a knowledge of many details in connexion with the mining fields and mineral concerns visited. The kindness shown the visitors at all hands, and the readiness with which every sort of information was given, were most gratifying, while the hospitality extended was lavish. . . . . The Premiers of the provinces, and other important government officials, lent their aid in giving the visitors a good time, and succeeded admirably. It was apparent that the Government was giving every encouragement to the various institutes represented in the party to get all the information possible on the mineral resources of Canada, with a view of having their riches and abundance more widely known.

'This excursion among the mines of Canada, from Sydney, N.S., on the Atlantic, right across the continent to Victoria on the Pacific, was carried through in perfect weather and under exceptionally good conditions in respect of comfort and convenience and kindness shown.

'It is hoped that the particulars given in these articles have served to encourage a wider interest in one of the spheres of Canada's activities, which hitherto, perhaps, has been too little regarded in this country. While much has already been done in opening up its minerals, a very cursory study of the map of Canada will show that the mineral development of the Dominion is only in its infancy; that there are immense areas still undeveloped for want of means of transport, and immensely greater tracts still unexplored which may yield rich returns to the prospector. The country is healthy. Its people are enterprising and loyal. The King is everywhere honoured; law is held in respect and order prevails.'

The Canadian Mining Institute is to be congratulated on its enterprise in initiating and carrying out this important undertaking, and the mining men throughout the country for their generous assistance, which made the excursion a success.

The railways, particularly the Intercolonial and the Canadian Pacific, did everything in their power to add to the comfort of the excursionists. By having a passenger agent on the train, and moving it whenever we were ready, the Canadian Pacific railway made it possible to utilize all the time for the work in hand, and thus enabled the visitors to see far more in the time available than would otherwise have been possible.

FIELD WORK.

From Calgary I returned to Phœnix and spent several days with Mr. LeRoy going over some of the important points in connexion with his investigation of the geology of the ore deposits.

From Phœnix, accompanied by Messrs. LeRoy and Boyd, I went to the Slocan to look over the work to be done by the 'Survey' in this district, and incidentally visited some of the mines. As Mr. LeRoy is working in this district, and will describe it in detail, it is unnecessary for me to refer to it further.

SILVER LEAD.

The past season has been marked by an increase of interest in silver-lead mining, to a considerable extent due to the renewal of the lead bounty. Several important finds have resulted, notably the new ore shoot in the Rico at Sandon. This district has only been partially prospected. On most of the properties good ground adjoining the old ore shoots has never yet been cross-cut—what ore was to be seen was extracted, then work stopped.

It seems practically certain that further exploration will discover other ore-shoots similar to those which made the Slocan famous.

SHEEP CREEK CAMP.

A few days were spent examining the developments on Sheep creek near Salmo. A reconnaissance survey of this district had been made in 1897 by Mr. R. G. McConnell, assisted by the writer, who drew the attention of prospectors, who had been confining themselves to silver-lead and iron caps, to the promising quartz veins. A number of quartz claims were staked and a few developed with more or less success, notably the Yellowstone, on which a 10 stamp mill was erected, and the Queen, but only recently has any marked interest been taken in this camp. About $250,000 will be recovered from the limited operations of this year, and it gives promise of receiving vigorous development.

Geology.

The veins at present being worked occur in a band of quartzites, slates and schists, which extend northward from about Lost mountains across Sheep creek, at the forks of Sheep and Wolf creeks, and up the ridge between Sheep creek and Fawn creek. To the west is a wide band of crystalline limestone. Some granitic and aplitic dikes are intruded into the formation, and also some basic mica dikes. The general strike of the rocks is about N. 12° E. with a dip of 50° to the east. The veins are fissure veins cutting the formation, usually the quartzite.

QUEEN MINE.

The Queen vein on the south side of Wolf creek, near the forks, is a well marked quartz vein from 6 to 11 feet in width, probably averaging about 7 feet in the workings. It is very regular, and has usually clean-cut walls with seams traversing it parallel to the walls. The country rock is white quartzite, with micaceous partings, striking about north and dipping eastward at an angle of 50°. The vein, which is about vertical, strikes in a south-westerly direction, thus angling across the formation, but stringers from the vein may take off parallel to the quartzite. A few mica dikes cut the vein, the largest being about 25 feet wide. While the walls are usually clean-cut, in places the quartzite may be mineralized to some extent, in which case it is difficult to distinguish the vein matter from the white quartzite, except by the bedding planes of the latter which differ in direction from the parting planes of the vein.

The ore is white milky quartz, with pyrite and pyrrhotite in about equal proportions developed in it. There is also some galena, and a sprinkling of blende and chalcopyrite. These sulphides constitute about 8 per cent of the ore. The values are chiefly in gold, more than 50 per cent of which is saved on the plates. The concentrates are said to run $48 to $70 per ton. The gold is reported to increase with the percentage of galena present, suggesting a relationship between the two.

The main tunnel has been driven 900 feet in on the vein. At 575 feet, a 200 foot shaft has been sunk and a second level started from the shaft. All the workings are said to be in ore which, in the bottom level, is reported to run higher than in the upper level. The ore as milled is reported to run from $10 to $18.

The ore is treated in the Yellowstone mill, run by water-power. About 55 tons of ore per day are milled and 4½ to 5 tons of concentrates are produced. The Yellowstone lies between the forks of Sheep and Wolf creeks, and was the banner claim, but work at present is confined to the Queen. I was informed by the manager that in all 39,000 tons of ore had been treated in the Yellowstone mill, producing about $370,000.

KOOTENAY BELLE.

Just beyond the Yellowstone, on the steep southern slope of Sheep creek, lies the Kootenay Belle. Here in a formation of quartzite and schists cut by aplite or quartz porphyry dikes, are two parallel veins 80 feet apart, with the same south-west strike as the Queen. The north-westerly vein runs from 15 inches to 3 feet in width, and the other vein approximately 5 feet.

The ore consists of rusty quartz, but in the lowest workings, though still mostly oxidized, some unaltered galena and pyrite may be detected. In the smaller lead, wolframite and scheelite occur in the quartz, generally near the walls. They are segregated into bunches or kidneys; occasionally about 30 pounds of this exceedingly valuable material will be found in one bunch. In places tungstite occurs as an oxidation product. Occasionally the ore is very rich. The shaft and slope on the smaller lead, for example, has a width of 3 feet of decomposed quartz that shows abundant free gold everywhere. In the lower workings, 200 feet below the surface, the ore is said to run higher than above, that is, it is getting richer as the lower limit of the zone of oxidation is approached.

The ore mills freely and very little concentrates are as yet produced. This is to be expected while the ore remains oxidized. The mill is situated in the valley bottom.

the ore being dropped by an aerial tramway. The mill is equipped with two batteries of two triple discharge stamps each, and an Overstrom table. Twelve to fifteen tons of ore are treated per day.

On the Nevada claim, which is across the creek from the Yellowstone, a vein 8 inches wide cuts the formation in the same manner as the Queen vein. Several other veins are located on the property. The filling is vesicular quartz, with pyrite in the undecomposed cores. The decomposed quartz pans freely.

The Nugget, Golden Fawn and Mother Lode claims lie close together on the ridge separating Fawn creek from the upper reach of Sheep creek, the Nevada lying on the Fawn Creek slope, the Golden Fawn on the summit, and the Mother Lode on the Sheep Creek slope.

NUGGET MINE.

The Nugget vein is also a quartz-filled fissure traversing the quartzite. It stands vertical and has a strike of about N. 66° E. The vein varies in width, in places reaching 10 feet. A pay strike of high-grade ore, from a few inches to several feet in width, is usually found in the vein. The vein stuff consists of oxidized quartz. Blue, watery quartz is said to carry the best values.

The vein is developed by three tunnels connected by raises. The lower tunnel starts from a contact between schists and quartzites, as a cross-cut to the vein, which has been drifted on for 200 feet. The intermediate tunnel has opened up 80 feet of the vein, and the upper tunnel 60 feet. The end of the lowest tunnel is about 200 feet below the surface, and here the vein is still highly oxidized and burnt looking. The ore pans freely, and very good returns are reported from trial shipments. Shipping ore from the richer portion of the vein is said to run $90 to $120 per ton, and milling ore $20 to $40.

A car shipped from the intermediate tunnel representing 10 feet across the vein yielded $34 per ton. Two hundred tons shipped are reported to have averaged $115 per ton, and 100 tons from the full width of the vein $23.50. From the face of the lower tunnel near the raise, 6 feet wide, $72 per ton was obtained, and from the raise itself 3 feet of the vein yielded from $150 to $250. Good ore from what was believed to be a second vein was found during our visit. A mill is being erected below the mine on Fawn creek, buildings are being constructed and the mine put in condition for operation.

The Golden Fawn ledge on the crest of the ridge a little north of the Nugget strikes N. 75° E., and dips 75° south.

MOTHER LODE MINE.

The Mother Lode has a vein several feet in width, which strikes 80°, very nearly the same course as that of the Nugget vein. It has, however, a slight dip to the south. The vein is several feet in width, with a pay strike of about a foot in width next the foot wall. About 100 feet of the vein has been stoped to a depth of 20 feet, and a winze sunk 40 feet. A cross-cut tunnel 80 feet long taps the vein at the foot of the winze: $17,000 are said to have been recovered from these workings. At the entrance to the tunnel is a second vein, which, however, appears to be barren where exposed. Its course is about 105°, with a dip to the north. One hundred feet below this tunnel the main working tunnel has been started.

About 200 yards west are further workings on a vein which has the same course as the main vein just described, but which the management believe to be a second vein. Three tunnels have been run in on this vein. The pay-streak runs from about 8″ to 12″, and consists of highly oxidized quartz with free gold. The face of the lowest drift shows 4 feet of good looking ore. Arrangements are being made for a tram to Sheep creek, a distance of 4,300 feet, where a mill will be built.

FUTURE PROSPECTS.

From the foregoing description it will be apparent that the gold veins of Sheep creek are of considerable promise. They are clean-cut fissure veins of fair size; they appear to be persistent in a horizontal sense and are likely to be so in a vertical sense also; they appear to carry good values and to have high grade pay-streaks; and the ore mills freely. They are oxidized to a depth unusual in British Columbia. While no doubt they will be found to change from oxidized to sulphide ore if followed to any deeper levels, the experience with the unoxidized ore of the Queen mine below the zone of weathering justifies the hope that they will remain to a large extent free milling, that the sulphides will be profitably concentrated, and that the ore, while perhaps becoming poorer, may still remain of pay grade.

The conditions for mining are favourable. The properties can usually be developed by tunnels along the leads. Wood and water are generally conveniently available. A first-class wagon road, with easy grades, extends from the railway at Salmo to the Yellowstone and Kootenay Belle mills, a distance of about 10 miles. Short aerial trams would ordinarily place the ore at a point where it may be milled by water-power. If too great a demand should be made upon the local power, electrical energy might be brought in from the outside.

While the outlook is distinctly encouraging for profitable, small mines, it is to be understood that none of the veins as yet show signs of becoming large and heavy producers. Heavy capitalization would be as unwise as it is unnecessary.

So far it has the appearance of being a good poor man's camp. There are a large number of quartz veins about the head of Sheep and Lost creeks which afford a good field for the prospector.

AINSWORTH CAVE.

A day was spent at Ainsworth exploring the Ainsworth cave, with Mr. W. H. Boyd, Mr. Blake Wilson, of Nelson, and Mr. D. B. Kane, of Kaslo. The cave is situated about four miles back of Ainsworth at an elevation of 2,850 feet above it. The opening leading into the cave, about 15 feet wide, is surrounded by brush, and is therefore rather difficult to locate, for there is nothing in the neighbouring topography to suggest its presence. The descent is down a slope of loose boulders into a room about 20 feet wide and 120 feet long, from which is a descent to the underground stream which is responsible for the formation of the cave. Almost at the point the stream is encountered it drops into a pothole 12 feet deep. To follow it down-stream entailed a wetting, so that it was decided to first explore the up-stream portion of the cave. In general it is narrow and canyon-like, in fact it is an underground canyon, but it opens into several rooms a little smaller than that first entered. At one or two points it is constricted into a narrow, low tunnel, but in general it remains lofty

even if narrow. Stratified gravels are found, especially near the upper end, sometimes to a height of 15 or 20 feet above the stream bed, and occasionally filling the canyon to the roof, except where excavated by the stream. At the head the cave is filled with boulders, some 3 feet in diameter, mostly of granite, and these extend up a fissure which evidently communicates with the surface, as a draught of fresh air could be felt, and mud and sticks washed in from the surface were found among the boulders.

The stream flows northward and follows fractures and joint planes, northerly and transverse, giving it a step-like course. Where it turns in its course a tributary opening usually extends some distance back from the main channel. Narrow openings like 'raises' branch off from a chamber occasionally, and in one place at least, there is a second channel above the present one, connected by raises, like levels in a mine.

The country rock is a beautifully banded crystalline limestone, in which narrow bands of black, blue, gray, white, and yellow alternate. In places these show fine folding. This underground canyon has been excavated by the stream through erosion and solution, along the fractures and parting planes of the rock. Fantastic forms result from the unequal corrasion, such as pendant ribbons from the roof. These, with the stalactites and stalagmites, the falls and basins of travertine, the banded wall rock, and the aisle-like canyon render the cave a beautiful spot, and one well worth a visit. The finest effects from the deposition of lime carbonate from the infiltrating waters are found in the narrow tributary chambers. The air was everywhere fresh. The end of the upper portion of the canyon is about 900 feet south of the mouth, but the winding of the stream makes the actual distance travelled about 200 feet farther. All our time was taken in the upper portion of the canyon so that the exploration of the lower portion had to be deferred. Unless the stream soon emerges to the surface this portion of the cave is likely to be more impressive than the upper, as the chambers are growing larger down-stream.

ROSSLAND.

A few days were spent at Rossland correcting the proof of the economic geology sheet of the camp. The recent developments have added considerably to the knowledge of the geology of the camp, as well as to the supply of ore in sight. Many of the dikes unite at depth, so that in the lower workings they are less numerous but bigger. On the lowest working that cuts the Nickel Plate dike it had a width of 250 feet.

The development on the Iron Mask has straightened out some of the questions regarding the identity of veins in this neighbourhood, but more work will yet have to be done before the problem will be cleared up. At least eight veins are now known in this section, around the corner of the War Eagle, Iron Mask, and Centre Star.

In the work on the Idaho, two main veins have been located, which may represent the main and south veins of the LeRoi and Centre Star. The deep developments are encouraging: one of the notable finds being the location of an unusually rich ore shoot on the 1,650 level of the LeRoi. At the time of my visit it had been developed for a length of 150 feet, and its width was about 6 feet. The ore consists of quartz, with some pyrrhotite and pyrite, and a little chalcopyrite. The quartz has a fractured appearance and the sulphides occur in veinlets and bunches in the reticulating fractures. Where the pyrrhotite forms considerable masses, quartz occurs in it in the

form of blebs. This ore differs materially in appearance from that of the upper workings, which certainly was never of the same character as this deep level ore. The discovery of a shoot of such rich ore at this depth is one of the most encouraging developments in the recent history of the camp. The development in the deep levels of the Centre Star mines has also been promising. While shipments from the Centre Star mines have been greatly increased, the development work appears to have more than kept pace with the ore extraction.

Exploratory work on an extensive scale has been in progress on the California. A shaft has been sunk from the tunnel and a level run connecting with the west end of the 500 foot level of the LeRoi No. 2, to explore the continuation of the Hamilton vein of the latter mine in the California ground. This work has furnished evidence of the intrusive nature of the contact of the augite porphyrite with the stratified rocks. The ground in the neighbourhood of this contact is much faulted, increasing the difficulties in the way of development work.

The LeRoi No. 2 mine has had a successful year, maintaining its reputation as a dividend payer. In addition to development work in the LeRoi No. 2 mine itself, prospecting was being done on the Surprise claim.

More attention than usual has been paid during the past season to outlying claims. Many of these, on which extension work was done in the early days of the camp, are reopened, mostly under lease, and from some of these, shipments have been made. The more favourable rates for transportation and treatment enable ore to be now shipped at a profit that formerly was too low to touch. It is believed that such ore, exposed in the old workings of some of the properties, may be utilized to develop them into shippers.

Particularly interesting are the results in the silver lead veins of the South Belt. The pyrrhotite leads in the belt which were worked in the boom days proved disappointing. The silver lead claims, though the first staked in the camp, never received very serious attention, as they were immediately eclipsed by the iron caps of Red Mountain, which soon became all the rage. Some attractive little veins with high-grade ore, however, occur in the belt, though the faulting to which the rocks here have been subjected may interfere with their development. The Blue Bird has been worked throughout the year and several carloads of high-grade ore shipped. If the work on this property proves permanently successful a revival of activity in the South Belt may be expected.

Further time could have been spent with advantage in Rossland in examining the recent developments, but the necessity of resuming office duties at Ottawa prevented this.

Returning, I found the railway on the plains blocked with snow, and hence a detour by way of Edmonton was made. There a day was spent visiting local coal occurrences. As these were examined by Mr. D. B. Dowling in detail, and are described by him on a later page of this report, no further mention of them is here necessary. I reached Ottawa on October 28.

PRINCE EDWARD ISLAND.

At the beginning of December I again visited Prince Edward Island in connexion with the drilling operations being conducted there under the auspices of the 'Survey,' and made arrangements for the drilling of a new well.

The Permo-Carboniferous rocks exposed on the island overlie the coal-bearing formations. Ever since the first geological examination of the island the question of the depth at which the coal-measures might occur, and of the possible extension of coal basins from Nova Scotia or Cape Breton, has been of more than local interest. If coal should occur within commercial limits of the surface, it would mean much not only to the island itself, but also to the other maritime provinces, for the coal prospects of the latter would be vastly increased.

This question can only be settled by deep-boring. Such holes will also test the possibilities for oil and natural gas. Indications of oil, sufficient to have induced extensive prospecting, occur in Gaspé and New Brunswick. On the island the conditions for the formation of gas or oil reservoirs, so far as can be judged by the surface geology, are rather better than at either of the former localities. These considerations, coupled with the fact that no surface geological examinations that could at present be made would be of any economic benefit to the Province, led the 'Survey' to undertake underground investigation by means of bore-holes. A contract was accordingly given to an experienced driller to put down four bore-holes on the island, if possible to a depth of 2,500 feet each.

The first bore-hole was located on the flat anticline running through Gallas point, in what are believed to be the lowest rocks exposed on the island. The coal measures should, therefore, be nearer the surface here than at any other point on the island. The hole was located at a convenient point on the farm of Jas. Twedie, near a spring which would supply the boiler with water. This is a little to the south of the precise axis of the anticline, but the low dip makes it immaterial whether the hole is located on the axis or a short distance off. The well was begun on September 26.

The following log gives the main features disclosed by the boring:—

Depth.				
Surface	to	65	feet	Red sandstones. Soft water
65	feet to	145	feet	Red shales. Soft water.
145	"	205	"	Red sandstones.
205	"	295	"	Red shales.
295	"	395	"	Blue shales.
395	"	405	"	Light red sandstone.
405	"	435	"	Blue sandstone. Small amount of fresh water.
435	"	635	"	Red shales. Salt water.
635	"	995	"	Red shales.
995	"	1,015	"	Red sandstone.
1,015	"	1,125	"	Red shale.
1,125	"	1,155	"	Gray shale.
1,155	"	1,165	"	Red sandstone.
1,165	"	1,170	"	Red shale.
1,170	"	1,190	"	Red sandstone.
1,190	"	1,195	"	Gray shale.
1,195	"	1,205	"	Gray sandstone.
1,205	"	1,355	"	Red shale.
1,355	"	1,395	"	Red shale.
1,395	"	1,415	"	Red sandstone.
1,415	"	1,620	"	Red shale.
1,620	"	1,660	"	Red sandstone.
1,660	"	1,725	"	Red shales.
1,725	"	1,750	"	Fine red sandstone.
1,750	"	1,870	"	Red shales.
1,870	"	1,875	"	Red sandstone. Salt water.
1,875	"	1,880	"	Red sandstone.
1,880	"	1,910	"	Gray, porous sandstone. Salt water.

The hole was started with a 10″ drive pipe and 8″ casing, which had to be reduced owing to water and caving. At 1,800 feet a cave took place, necessitating the intro-

duction of a string of 5⅝″ casing, causing a delay of a month through the slow delivery of the casing. At 1,910 feet the soft porous sandstone was caved by the pressure of the salt water, and with the water, the caving sandstone, and the small diameter of the casing, it was found impossible to make further progress with this hole, so that on November 28, work was stopped.

From the surface down to 1,880 feet the hole is evidently in the characteristic, reddish, Permo-Carboniferous rocks. The last 30 feet are in a gray, porous saltwater-bearing sandstone, unlike any of the rocks previously encountered. The casing has been drawn, and a new hole is being started two miles farther north on the other side of the axis of the anticline. This hole will be started with a 13″ drive pipe, and 10″ casing. It is hoped that with the larger hole no difficulty will be experienced in getting it down to the required depth.

PRELIMINARY REPORT ON A PORTION OF THE YUKON TERRITORY, WEST OF THE LEWES RIVER AND BETWEEN THE LATITUDES OF WHITEHORSE AND TANTALUS.

(D. D. Cairnes.)

INTRODUCTION.

The work during the season of 1908 was virtually a continuation of that commenced last year, being chiefly devoted to the mapping, and geological examination of those areas north of Whitehorse and south of Tantalus, known to contain coal or to be underlain by coal-bearing formations; it being more particularly desired to ascertain the nearest points accessible to Whitehorse at which coking coal, similar to that at Tantalus, could be obtained. During the greater part of the season I was ably assisted in geology by Dr. O. Stutzer, lecturer in geology at the Royal School of Mines, Freiberg, Saxony; while Mr. H. Matheson performed in an efficient manner the greater part of the topographical portion of the work.

Men, horses, and supplies were obtained in Whitehorse, whence a start was made for Tantalus situated at a distance of 131 miles along the Whitehorse-Dawson road. The trip occupied twelve days, during which time certain reported coal discoveries along the route were investigated, and a rapid geological reconnaissance was carried on with the view of assisting in the determination of the best localities to map during the season.

AREAS MAPPED.

Actual mapping was commenced at a point about 4 miles south of Tantalus, in order to extend to the south the Tantalus sheet which, begun during 1907, reaches from there to the north, and includes the district in the vicinity of the Tantalus and Five Finger coal mines. The territory examined and surveyed during the first part of the past season, extends from the limits of the older sheet, in a southerly direction for about 35 miles, with an average breadth of about 12 miles. It includes the first range of hills west of the Nordenskiold river and the mountains on the east side of this stream as far as the easterly limits of the coal-bearing strata.

Between the southern bounds of the district thus examined and the northern edge of the Lake Leberge map, lying to the south, and surveyed during 1907, lies an unmapped area 14 or 15 miles wide. Since this strip of country was not known to be of economic interest, it was decided to omit it, and to devote the latter part of the season to the gathering of data for extending the Lake Leberge sheet to the south and west, so as to include certain known coal areas. This added portion is about 19 miles long by 14 miles wide, and extends along the wagon road from a point 2 or 3 miles above Braeburn to within about a mile of Kynocks.

In addition to the work in connexion with these coal areas, the writer made a rapid trip up the Hutchi river to Mack's Copper and to the Gilltana Lake claims. On the way south from Whitehorse, during the latter part of September, a day was spent at Conrad, investigating the latest developments on Windy Arm.

PHYSICAL FEATURES.

The entire district strictly belongs to the interior plateau region of the Yukon Territory, which, originally eroded to peneplain conditions, was subsequently subjected to a rather rapid uplift. Consequently the erosive agencies were greatly

augmented, and the plateau thus formed was soon dissected, so that now it is only in places that distinct remnants of it are left, and these are not particularly evident within the area examined this season. The district consists, in a general way, of low, rounded hills, with only here and there a higher and more rugged peak or ridge relieving the otherwise monotonous landscape, though few rise more than 1,700 feet above the surrounding valleys.

The Nordenskiold river and its three chief branches, the main waterways of the district, flow in wide, flat valleys, generally at least one mile, and often nearer two miles broad, forming the most pronounced topographical features of the country. One other important valley, though containing only a very small creek, apparently extends to the north end of Lake Leberge, and joins the Nordenskiold valley about 6 miles above Montague. All the main valleys have beautifully terraced slopes rising from 5 or 10 feet to several hundred feet above the valley bottoms, possibly indicating successive uplifts of the district.

The effects of glacial action gradually decrease towards the north, and although glacial markings were seen within 5 miles of Tantalus, towards the northern end of the district, yet the chief results of glaciation have been to fill the valleys, cover the hillsides, and often the summits as well, with great thicknesses of gravels, clays, silts, etc. To such an extent is this the case that in many places there is almost an entire absence of rock outcrops, thus rendering the bed-rock geology very obscure.

All the valleys of the district are dotted with irregularly shaped lakes ranging in size from mere ponds to others 6 or 7 miles in length. They often have no apparent inlets or outlets and seemingly originated during the final stages of the glacial epoch.

GENERAL GEOLOGY.

What are believed to be the oldest rocks seen this season were discovered only in one place, where they consist of a group of chiefly fine grained, dark coloured amphibolite schists with light coloured, generally reddish gneisses. They resemble members of the Older Schistose Rocks and are considered to be of Pre-Ordovician age.[1]

In a gulch just north of Poplar mountain are some dark, generally thinly bedded, highly disturbed slates and cherts, resembling members of the lower Cache Creek series of Carboniferous or possibly Devonian age.[2]

At numerous points in the southern portion of the district are outcrops of limestone similar to that seen in the southern portion of the Yukon, and there considered to be of Carboniferous or possibly Devono-Carboniferous age.[3] Fossils have been collected from these rocks, and it is hoped that when examined they will definitely decide the age of the beds.

Newer than the above limestones, but older than the Cretaceous, are some quartz porphyrys which outcrop over considerable portions of the district. They generally are reddish blue to reddish gray in colour; and feldspars, biotite and quartz occur in well outlined, easily discernible crystals lying in a ground mass varying in grain from felsitic to quite coarse. A series of generally fine grained volcanics, chiefly tuffs, porphyrites, gabbros, etc., are also present in the district and belong to about the same period of igneous activity as the quartz porphyries.

Younger than all of the preceding groups is a series of Cretaceous age, consisting of a great thickness of sediments overlain by volcanics and bedded tuffs. Fossils were collected from this series, but as yet they have not been examined. In the Conrad district the representatives of these sedimentary and volcanic beds were placed in the Tutshi series.[4]

1. Cairnes, D.D.—'Report on a portion of Conrad and Whitehorse Mining Districts, Yukon,' pp. 24-25, Geological Survey, 1908.
2. Op. cit., pp. 26-29.
3. Op. cit., pp. 25-26.
4. Op. cit., pp. 31-36.

The basal member of the Cretaceous is a coarse, massive conglomerate having a total thickness of 500 to 800 feet, and in places, possibly more. The component pebbles and boulders are chiefly of granite, quartz porphyry, fine grained, green volcanics and limestone, those of granite predominating. This conglomerate is of frequent occurrence and is overlain by a thick group of conglomerates, sandstones, shales, etc., varying in thickness in different localities, from 1,000 to 3,000 feet or more.

The lower half of the column of Cretaceous sedimentary beds above the basal conglomerate is characterized by the presence of dark coloured, hard sandstones, with considerable thicknesses of dark to almost black, thinly bedded clay slates and shales. These are overlain by a group containing the lower coal horizon, and consisting chiefly of massive, coarse, friable sandstones, gradually becoming lighter coloured towards the top, where, in places, there is a thickness as great as 1,000 feet of almost perfectly white—except where iron stained—coarse sandstones composed of clear white, quartz pebbles cemented by a pure white, calcareous base.

The upper half of the group of Cretaceous sediments largely consists of massive beds of conglomerate, sometimes aggregating as much as 1,500 feet in thickness, and in this horizon occur the Tantulas coal seams. The pebbles of these conglomerates are altogether of chert, quartz or slate of the lower Cache Creek series.

Overlying the above conglomerates is a group of fine grained, bedded tuffs, often appearing as thinly bedded, dark to almost black, shales. These are intimately associated and interbedded with greenish tuffs showing no bedding and appearing to pass into porphyrites, etc. In fact, in this district, the truly bedded deposits laid down under water, grade into and are so closely associated with the volcanics that it has been found impracticable to map them separately.

Newer than the above series of sediments and volcanics is a very extensive group of andesites, dacites, tuffs, etc., different members of which respectively cut or overlie the older formations. It is this volcanic group which is found overlying the conglomerate containing the coal horizon in so many places, and which renders the exploration of the coals very difficult.

Youngest of all is a volcanic group, in all probability of Tertiary age, consisting of scoria, basalt and basalt tuff, the tuff being the newest rock in the district. The basalts are either reddish or bluish in colour and are generally quite amygdaloidal. The tufaceous beds are often as much as 1,500 feet in thickness and are commonly quite coarse, containing bombs ranging from one to even two feet in diameter.

ECONOMIC GEOLOGY.

Coal.

There are two coal-bearing horizons of economic interest in this portion of the Yukon Territory. An upper horizon occurs near the top of the thick assemblage of conglomerate beds forming the upper half of the group of Cretaceous sediments, and to this higher zone belong the seams at the Tantalus mine and on Tantalus bluff. A second, lower coal-bearing horizon lies towards the base of the Cretaceous column as seen at the Five Fingers mine, also at a point west of the 69 mile post from Whitehorse on the Whitehorse-Dawson road and elsewhere.

The seams of the Tantalus bluff and the Tantalus mine doubtless extend a number of miles to the north and south of these places, but prospecting for coal is rendered particularly difficult there by the thick mantle of glacial and recent alluvial material which covers the greater part of the district. Beginning within a distance of two or three miles south of Tantalus, the Cretaceous sedimentary rocks are, for the greater part, covered with more recent Tertiary basalts, basalt tuffs, etc., so that although in the 20 miles immediately south of the Tantalus mine there is believed to be a great amount of coal, it will, in most places, require very careful prospecting to find it suitably located for mining purposes.

South of this district in which the strata have been so largely covered by later volcanics, the coal-bearing formations have been removed by erosion for a distance of over 30 miles to where a belt of the conglomerate of the upper coal horizon was found, traversing the district in a direction somewhat north of east. About 4 miles east of the wagon road the formation passes beneath a great thickness of volcanics, but to the north-west, the formation is believed to extend a number of miles, and may exist as a continuation of the outcrops seen crossing the Hutchi River valley about 30 miles from the mouth of the river. The formations near the road are in the form of a double synclinal fold, the upper portion of the formation, and consequently the upper coal horizon, being here eroded away. The seams of the lower horizon, however, were seen in several places, being particularly well exposed along a small creek about 4 miles west of the 69 mile post from Whitehorse. At this point a number of seams were uncovered and others probably exist, as very little prospecting has been done here. Of the seams seen, one was 7 feet wide, one about 4 feet wide, and several between 6 and 8 inches in width. The following are approximate analyses by fast coking of these coals, furnished by Mr. F. G. Wait, of the Mines Branch. No. 1 represents an average of an 18″ seam, and No. 2 of a 7′-6″ seam:—

	I.	II.
Water	8·98	12·02
Volatile combustible matter	29·62	34·28
Fixed carbon	48·30	42·56
Ash	13·10	11·14
	100·00	100·00
Coke, non-coherent	61·40	53·70
Ratio of volatile combustibles to fixed carbon	1:1·63	1:1·24

The ash in No. 1 is white; in No. 2, pale reddish brown.

Coal was seen also along the side hills to the east of the wagon road between the 117 and 118 mile posts, but the very thick covering of glacial material made the measuring of the seams very difficult. One seam, less than 2 feet wide, was seen on a small creek which crosses the road between the 113 and 114 mile posts. The following is an approximate analysis by fast coking of a sample from this seam by F. G. Wait, of the Mines Branch, who states that the coal 'is probably a lignite which has been altered by intrusives.'

Water	4·68
Volatile combustible matter	15·59
Fixed carbon	72·26
Ash, reddish brown	7·47
	100.00
Coke, non-coherent	79·73
Ratio of volatile combustible to fixed carbon	1:4·64

All information that can be gathered concerning the Tantalus, Tantalus Butte and Five Fingers mines has already been published.[5] The areas described in this report, and two other areas previously mentioned[6]—one along the Lewes river between Hootalinqua and the Big Salmon river, and the second at a point a short distance from the Tantalus mine—include all the places north of Whitehorse and south of Tantalus at which the upper coal horizon is known to occur.

Mack's Copper.

A few miles to the south-west of Montague, and only a short distance west of the western edge of the Tantalus map, are a number of mineral claims, locally known as Mack's Copper, because originally they were mostly owned by Mack brothers. The property is reached, usually, by a branch road leaving the Whitehorse-Dawson road

5. Op. cit.

6. Cairnes, D.D.—'Report on portions of the Yukon Territory, chiefly between Whitehorse and Tantalus,' Summary Report for 1907, Geological Survey Branch.

about 6 miles above Montague, and following approximately the old Dalton trail south-westerly up the Hutchi river. From a point about 8 miles in on this road, a trail ascends the hills to the north of the claims which virtually are on the summits about 4 miles distant from and 1,900 feet above the valley. Practically all the ore in the vicinity appears to be on one claim.

The ore, which occurs in a fine grained, greenish, porphyrite at or near its contact with limestone, consists chiefly of magnetite, with hematite in minor quantities, both being more or less impregnated with copper minerals, chiefly chalcopyrite, malachite and azurite. The main mass of mineral is in the form of a small knoll of almost solid iron ore, about 200 feet wide, by, perhaps, 300 or 400 feet long. On the south side of the hill the iron carries considerable copper, while the ore on the top of the knoll shows no copper, possibly because of leaching. A cross-cut tunnel has been started in one of the most promising places on the hillside, and when visited was in about 35 feet.

The only other work done on the property is in the form of an open-cut on an adjoining knoll to the west. The ore bodies in the two places apparently are not connected. The ore body in the more westerly locality is only 10 to 12 feet wide and lies next to and more or less in the limestone. The richest ore is found here, but has only been traced a short distance; it may, however, continue farther along the limestone, for the contact is so deeply covered with superficial deposits that only a few feet as yet have been uncovered.

The following samples were taken by the writer and have been assayed by Robt. Smart, government assayer at Whitehorse. No. 1 is an average of the end of the tunnel, No. 2 is an average of the best 4 feet of the open-cut.

	I.	II.
Gold, ounces per ton	Trace	0·025
Silver, ounces per ton	Trace	3·400
Copper, percentage	1·80	5·55

The Gilltana Lake Claims.

Most of these claims were staked during the season of 1907, though a number were located during the last summer. They are located on both sides of Gilltana lake, which lies some 15 miles in a north-westerly direction from Hutchi lake and village. Locally the claims are known both as the Gilltana Lake claims, and as the Hutchi copper.

The ore on the north-west side of the lake occurs at the contact between granite and limestone, and is in the form of narrow lenses of mineralized matter and quartz. The widest lens seen had a breadth of about 4 feet, but as a rule, the bodies are only from 1 to 2 feet wide and have at present no economic value.

Across the lake the claims are chiefly located over the face of a hill rising about 1,200 feet above the water. The country rock is mainly mica schists, interbanded with which are some beds of quartzite and limestone, the latter generally being narrow—3 to 4 feet wide, but sometimes as much as 50 feet thick. The strata strike about parallel with the lake and dip into the hill, so that the different bands of schist extend along the face of the hill, one above the other, maintaining an almost horizontal outcrop. In places these bands have become mineralized with magnetite, generally carrying copper minerals, chiefly chalcopyrite and malachite, and these constitute the ores bodies. The original schists show all degrees of mineralization and replacement, from portions entirely non-metalliferous to others now consisting of almost solid iron ore.

The best of these mineralized bands or zones average from 6 to 10 feet in width, although one was seen having a breadth of 20 feet and consisting of almost solid ore. The mineralized bands generally can be traced for 50 to 100 or even 200 feet, when the iron and copper minerals gradually disappear, or at times seem to be continued along other parallel bands. Three prominent, with other less important bands, were observed at different elevations on the face of the hill.

At the surface the copper minerals appear to have been leached out, but may be found re-deposited lower down. On the Helen claim, up Franklin creek, some open-cut work has been done, and there, in places, streaks of copper ore 1 to 3 feet thick were seen, included in wider bands that are much richer than observed elsewhere.

Apparently the ores are connected in origin with the intrusive granites found in the vicinity. The strata have been cut by dikes of light coloured hornblende andesites and dark fine grained basalts, but these have had no visible effects on the ore deposits. The district is well worth prospecting and a number of the claims look very promising.

The following represent the results of assays of two samples from this district. No. 1 is a sample taken across the strike of one of the best looking bands which had a width of about 6 feet. No. 2 is a sample of one of the 3 foot streaks of copper ore on the Helen claim.

Gold, ounces per ton..	Trace	Trace
Silver, ounces per ton..	Trace	Trace
Copper, percentage..	1·35	9·00

WINDY ARM.

Since the season of 1905 the Venus has been worked continuously with very satisfactory results, so that now a large amount of ore has been blocked out and some small, though high-grade shipments have been made to outside points. During the past year this is the only property in the district upon which work of any considerable importance has been performed; the reason for this inactivity being chiefly difficulties in company organization, etc., rather than the lack of promising conditions on the claims themselves.

The first concentrating mill built in the Yukon has, this season, been completed. It is situated on Windy Arm just below the Venus, the ore being carried from the workings to the mill by an aerial tramway. A 100 h.p. boiler, and a 75 h.p. engine, at present generate the motive power, but a water-power plant is being installed. The ore is first hand-sorted, then passed over a grizzly and the overs crushed by a Blake crusher. The ore is sized by trommels giving three products. Fine crushing is performed by a set of high-speed rolls and a Huntington mill. A set of jigs and four Callow screens concentrate the crushed and sized materials. The slimes are settled in six Callow settling tanks, and afterwards concentrated on three Wilfley tables and two Frue vanners.

The mill appears to have been well designated and constructed, and it is hoped that its erection will mark the introduction of the properties of the Conrad district into the class of producing mines.

FLORA AND FAUNA.

The principal varieties of trees in the district are white spruce, black pine, balsam poplar, aspen and willows. The white spruce is, by far, the commonest of these, covering perhaps half of the hillsides. Only in a few places were patches and isolated specimens of black pine noted, these being chiefly along the valley bottoms. Balsam, poplar, aspen and willow occur very plentifully in the valleys and on many hillsides, giving place very often to thick, dense growths of dwarf birch towards the summit.

Crowberries were very plentiful on all the hillsides. Black and red currants, blueberries, high bush cranberries and strawberries also occur.

Moose and bear are rather common in many places, caribou being less often seen. Fresh beaver cuttings were noticed in several places. Lynx and porcupine are very plentiful; while foxes, wolverines, wolves, and coyotes are in somewhat smaller numbers.

The lakes and streams are generally well filled with fish, chiefly grayling and pike. Salmon also come up the streams in great numbers in the autumn months.

The wide and extensive valleys of the Nordenskiold and its branches are often covered with very luxuriant growths of certain wild grasses and timothy. Oats

accidently scattered along the roads, are seen to grow well. Many varieties of vegetables grown in Dawson, Whitehorse and intermediate points, compare very favourably with those imported. It is well known that horses generally winter safely in the valleys without being fed. A collection of the common plants of the district has been made by the writer, and these have been examined by Mr. John Macoun, of the Geological Survey, who considers them as proving the district suitable for agriculture, since the specimens are similar to those found in the Canadian Northwest and more particularly in the vicinity of Prince Albert and Edmonton. For these and other reasons it is hoped that it will not be many years before this district proves itself to be an important one for stock raising and agricultural purposes.

EXPLORATIONS ON THE PELLY, ROSS AND GRAVEL RIVERS, IN THE YUKON AND NORTHWEST TERRITORIES.

(J. Keele.)

INTRODUCTION.

In the spring of 1907 I received instructions to investigate the mineral resources of a portion of the Pelly River basin, in the Yukon Territory; to inquire into the truth of certain rumours which had reached this Department concerning the existence of an active volcano near the headwaters of this river; and to explore and map as much as possible of the unknown region from the Pelly to the Mackenzie river, between latitudes 62° N., and 64° N.

I left Ottawa on June 2, 1907, travelling by way of Vancouver and Skagway, reaching Dawson on June 16.

To carry out the above instructions, it was necessary that I should winter in the country, hence sufficient provisions and outfit for this purpose were purchased in Dawson and three men engaged, namely, R. B. Riddell, J. M. Christie and Geo. Ortell, all of whom had been residents in the country since 1898.

Riddell was to remain with me during the whole time of the exploration; Christie was to leave me during the autumn, trap during the winter and join me in the spring; Ortell returned to Dawson in the autumn of 1907, from our winter quarters, with specimens and letters. Riddell and Christie owned two dogs each, which accompanied the expedition.

I succeeded in obtaining the services of Mr. Robt. Henderson, assistant mining engineer to the Yukon government, for the summer. Mr. Henderson, who was accompanied by his two sons, had his own boat and outfit. He visited several important points on the Pelly, doing some careful prospecting and collecting specimens.

ROUTES TRAVERSED.

We left Dawson on board the *La France,* on June 22, and reached the junction of the Pelly and Ross rivers, the head of steamboat navigation, on June 29; a distance of 160 miles on the Yukon, and 250 miles on the Pelly; all up-stream against a strong current.

After leaving the bulk of my stores with Messrs. Lewis and Field, who have a trading post at the mouth of Ross river, we continued the ascent of Pelly river from this point in two canoes, with provisions for one month.

On July 15, we reached Wolf canyon, a distance of 143 miles above the mouth of Ross river. From the mountain in this vicinity we could overlook the country in which the alleged volcano is supposed to exist, but saw nothing of it, and there are no recent volcanic rocks, either in the bed-rock or river wash.

I surveyed this portion of the country as completely as time would permit; then returned down-stream to Ross river. On our way down we met some prospectors toiling up-stream with their heavily loaded boats. Several of them were bound for Hoole river, which enters the Pelly 40 miles above the Ross.

At Ross river we built a wooden boat large enough to carry our entire load. On August 8, we started up the Ross river, accompanied by Charles Wilson, a prospector. The task that now lay before us was to traverse an unexplored mountain province about 300 miles wide, in the centre of which lay the great continental divide. This chain of mountains, comprising several groups and sub-ranges, is the northern

continuation of the Rocky mountains. We hoped, by following the valley of the Ross river to the watershed range, to find on the other side one of the branches of the Gravel river, and to descend that river to the Mackenzie. On August 28, we reached Third lake on the Ross river, about 120 miles from the Pelly. We made our headquarters at this point.

On September 5, George Ortell left us and started down the stream, carrying our letters and specimens. On October 1, Christie left for the trapping ground which he had selected. In the middle of February, the days having become sufficiently long, I was joined by Christie, and we began our journey toward the Gravel river. Our progress was slow, as we had a heavy load to move, and only three dogs. Strong winds, often increasing to the intensity of gales, and a heavy snowfall during the month of March, also contributed to delay us. During the first week in April we crossed the divide, through a pass about 5 miles long, totally devoid of trees. The elevation of the divide was estimated at 4,500 feet above sea level. Some of the mountain peaks bordering the pass rose 3,000 feet above it. A small stream trickled down from one of these mountains at the farther end of the pass. This stream proved to be the extreme head of the main branch of the Gravel river.

On April 23, we reached a point on the Gravel river about 30 miles from the divide, where we were satisfied the stream would afford boating water when the ice went out. We, therefore, decided to rest here and make our spring camp.

On July 18, we reached the Mackenzie river, and two days later boarded the Hudson's Bay Company's steamer *Mackenzie River* going up-stream, and returned to Ottawa by way of Edmonton.

The main geographical results of the journey are:—

(1.) A traverse of 520 miles through an unexplored territory, and the mapping of about 5,000 square miles of mountain country along this route.

(2.) The discovery of the sources of the following rivers: the main branch of the Pelly, the Ross, the south branch of the McMillan and the Gravel.

The survey was carried on during the winter months of February and March without discomfort, since the winter season was an unusually mild one in this region.

During the winter months the geological information gathered was necessarily rather meagre, the section obtained being based on occasional rock exposures seen in cliffs and canyon walls along the line of travel, too steep for snow to rest on.

TOPOGRAPHICAL FEATURES.

Although the greater part of the region between the Yukon and the Mackenzie is mountainous, three distinct but not sharply separated topographic types of country are apparent.

The country through which the Yukon river and lower portion of the Pelly river flow appears to be a dissected plateau. Here, an originally low, rolling country has been elevated to a height of about 4,000 feet above sea level, and carved by stream action into a series of long, gently sloping ridges, or dome-shaped hills, whose summits may be remnants of the original plateau. Following the Pelly river eastward, these hills become higher, and merge into mountains more or less rugged, with crests standing at a much higher elevation than the plateau region; from 6,000 to 7,000 feet above sea level. These mountains extend eastward to within 40 miles of the Mackenzie, and are then flanked by a narrow belt of foothills, which gradually decline in elevation until a fairly level plain is reached, standing at an elevation of about 600 feet above sea level. The Mackenzie river has trenched this plain to a depth of about 350 feet.

Of these three topographic provinces, the central, or mountainous one, is the most extensive, and is drained by streams flowing in both an easterly and westerly direction. The water parting on the route traversed is about 250 miles from the Mackenzie, and 450 miles from the Yukon. The streams flowing toward the former river are extremely

swift throughout their course, and are confined in narrow valleys; while those draining to the latter river have a comparatively easy grade, through wide valleys.

GENERAL GEOLOGY.

Until the observations made in the field are laid down on the map, it will be impossible to give with precision any account of the geological features of the region. The rocks, in a general way, however, may be roughly divided according to the topography.

The western plateau region is underlain by what is generally regarded as the oldest rocks of the region. These consist chiefly of various crystalline schists, of both sedimentary and igneous origin; but also contain a subordinate quantity of later intrusive rocks, including granites, diorites and andesites, which generally still retain their massive character.

The heterogeneous character of the rocks included within the mountain province precludes any lengthy description of them in this report. Briefly, those on the Ross river consist chiefly of sedimentary rocks; including slates, cherts and quartzites, together with a few small intrusive bodies of granite, diorite and andesite; while those on the Gravel river consist of sandstones, limestones, dolomite and conglomerate; and intrusives are seldom seen.

A small collection of fossils was obtained at several points in the mountains, and Mr. Lawrence Lambe has already examined the fossil corals from this collection. Mr. Lambe concludes that various horizons of Palæozoic rocks, ranging from the middle of the Ordovician to the Devonian, are represented. The stratigraphy of a portion of the section has since been worked out, and agrees closely with Mr. Lambe's conclusions.

The plain lying east of the foothills, and bordering the Mackenzie river, is underlain by soft sandstone, and conglomerates, probably of Cretaceous age.

In the plateau and mountain regions, the rocks were found lying at all possible attitudes. Folding and faulting of the strata, and the intrusion of igneous bodies of rocks have given rise to such a degree of complexity in the structure of the mountains that no attempt to give an estimate of the thickness of the various series of rocks passed over is here made. Towards the Mackenzie river the effects of the disturbing influences to which the mountain system is due, die out, or almost cease, so that the foothills and plain have simpler structure, and in places the beds for long distances are nearly horizontal.

Some features of special scientific interest occur in connexion with the superficial deposits and the evidences of glacial action. It is merely stated here that in both the Pelly and Ross valleys traces of heavy glacier ice moving in westward and northward directions are often apparent. This ice sheet was sufficiently thick to submerge the divide between the Ross and Gravel river, and to extend some distance down the valley of the latter stream. The greatest development of the ice sheet appears to have been on the western side of the watershed range, as the results of glaciation on the Gravel river appear to be feeble when compared with those on the Ross and Pelly. The direction of ice movement in the glacial period is of special interest, since it has an important bearing on the distribution of placer gold.

ECONOMIC GEOLOGY.

Prospecting for gold began on the Pelly river as early as 1882. For some years subsequently, miners working on the gravel bars made as much as $10 to $20 a day each, their operations being confined to the lower portion of the river. Since then prospecting has been carried on along the greater part of the river and many of its tributaries; but no mining of importance has yet been done in the region. Fine colours of gold are found in the gravels over a large area, but no coarse gold has

yet been located. For the last few years work in the district has been confined to the streams entering the Pelly from the south, between Lapie and Hoole rivers. These streams head in a high range, lying south of and parallel to the course of the Pelly. Along the base of these mountains lies a wide valley, floored with gravel and containing several lakes. This valley is separated from the Pelly river by a line of low rocky hills through which the streams have cut channels. The gravels of the valley carry fine and coarse colours of gold, and a portion of the gold, concentrated from them, is caught in the bed-rock in the lower portions of the streams tributary to the Pelly.

The Stewart River region, to the north of the Pelly, resembles the country in the vicinity of the latter, in many respects. Coarse gold was found in that region about ten years ago, and almost every year since then discoveries of more or less importance have been made. Two serious difficulties, however, hard to overcome, prevent the Stewart River country from becoming a successful mining camp. These are (1) underground water, and (2) lack of adequate transportation to ensure a supply of provisions for miners all the year round. The same difficulties apply to the Pelly River country. A good deal of rich ground, which could be worked by the open-cut method, was mined in the Stewart country, but individual miners have never succeeded in deep digging whenever they encountered underground water.

At least two parties of miners, and probably more, have prospected in late years on the Ross river, but without success. Chas. Wilson, who has prospected on the upper portion of the river during the last two years, informed me that he only got colours of gold in one small creek which flows into the south branch of the MacMilan river, and that he found no coarse gold at all. Our experience corroborates these statements. The explanation of Wilson's persistence in remaining in an apparently barren field is that he is in search of a phenomenally rich deposit of gold said to exist in this neighbourhood.

It is possible that coarse gold may exist on bed-rock on either the Ross or Gravel rivers, or their tributaries, but the apparent absence of fine gold in the gravels tends to discourage any hope of it being found there. A fact, frequently commented on by men who accompanied me, was the marked absence of quartz, either in the bed-rock or the wash gravels, along the route travelled from the Pelly to the Mackenzie.

There appears to be a close connexion in the Yukon Territory between the crystalline schists and the placer deposits. In the Pelly valley these rocks appear to occupy a belt extending for a distance of about 10 miles on each side of the river, which flows generally parallel to the strike. In the vicinity of Campbell creek, however, the Pelly river turns north-eastward, while the belt of crystalline schists continues south-eastward to the Francis river.

Fine gold is found in the gravels all along the Pelly, from Campbell creek to the Yukon, while none is found above that point on the river. Small veins and stringers of quartz are abundant in the schist, and quartz pebbles form a considerable percentage of the wash gravels along the Pelly. Mr. Henderson tested a few bars on the Pelly, at and above Hoole canyon, using two sluice boxes about 12 feet long. He saved for me several pounds of the black sand which accompanied the gold. A grayish white, malleable mineral in small scales, which I thought might be platinum, is abundant in this sand. The sample was submitted to Mr. Robt. Johnston, mineralogist to the 'Survey,' who states it to be ferro-nickel, a rare mineral; but of no commercial value in such small quantities. The bulk of the black sand is composed of magnetite and garnet.

Quantities of drift lignite are found along the lower part of Campbell creek, but the seams from which it is derived were not found. There is probably a small Cretaceous area lying on the schists in this vicinity, similar to the one on the Pelly, some distance below Ross river.

Drift lignite is found on the Gravel river where it enters the plain bordering the Mackenzie, and which is no doubt derived from seams in the adjacent Cretaceous

rocks. On the Gravel river, about 130 miles from the Mackenzie, there is an occurrence of hematite. This iron ore is coarsely laminated with red siliceous slate in a bed having a thickness of about 50 feet and lying between conglomerate and limestone.

FAUNA AND FLORA.

The valleys of the Pelly and Ross rivers are well wooded, the forest growth extending far up the hillsides. The principal trees are the white and black spruce; but poplar, birch and balsam, of inferior economic importance, are also present in small quantities.

The best timber grows on the islands or on the immediate banks of the river, in a strip varying in width from a few yards to over a mile, and consists of white spruce, with straight clean stems, averaging about 12″ in diameter 5 feet from the ground,

Beyond this strip the timber on the valley bottom and hillsides is thin in growth and of inferior quality. Between the headwaters of the Ross and Gravel rivers there is no timber of any kind for a distance of about 20 miles.

The timber resources of the Gravel river are only moderate. The valleys are narrow and rather steep, and therefore are not timbered to as great a height as those on the Yukon side, where the slopes are more gentle. The principal tree here is the white spruce also, with the best timber along the river banks, and a generally sparse growth on the hillsides, which may be white or black spruce. Poplar is to be seen at intervals along the greater part of the river, and some groves of small tamarack were observed on the lower portion. The plain bordering the Mackenzie is generally sparsely wooded with an inferior growth of poplar and black and white spruce.

There are evidently no great commercial timber resources anywhere on the route. Whenever special demand on the supply is made in any locality the timber within reach is soon exhausted.

Several white men and two bands of Indians make a living by trapping on the Pelly river and its tributaries, and large quantities of valuable furs are annually exported. The principal fur until the last few years was marten; but of late the principal catch has been lynx.

The upper part of the Pelly and its tributaries embrace a famous game country. Moose, woodland and mountain caribou, and mountain sheep (both white and saddle-back), are numerous. Black, brown, and grizzly bears, and timber wolves infest parts of the region, in considerable numbers. Although a few moose are to be found along the valley of the Gravel river, they are by no means plentiful. Small numbers of caribou inhabit the hills on the upper part of the river. Sheep, however, are plentiful on the mountains, about 50 miles from the divide.

ON A PRELIMINARY SURVEY OF THE GEOLOGY OF THE BRITISH COLUMBIA COAST FROM KINGCOME INLET TO DEAN CHANNEL, INCLUDING THE ADJACENT ISLANDS.

(R. P. D. Graham.)

During the summer of 1908, the writer, with the assistance of Mr. E. G. Montgomery, was engaged in a continuation of the reconnaissance survey of the British Columbia coast, which was commenced in 1906 by Mr. O. E. LeRoy, and carried a stage further by Mr. J. A. Bancroft in 1907. The launch *Dawson*, belonging to the Geological Survey, was again used as a means of transportation. Altogether, rather less than three months were spent in the field.

Commencing at the entrance to Kingcome inlet, the examination of the coast, together with the adjacent islands, was carried as far north as Bella Coola, at the head of the north Bentick arm of Burke channel; a distance along the main coast of about 100 miles.

PHYSICAL FEATURES.

The coast maintains its general north-westerly trend until Cape Caution is reached, then it takes a rather decided turn, and for the next 70 miles or so, runs almost due north. Beyond this, it again approaches the former direction. This north and south stretch lies between the northern extremity of Vancouver island and the most southerly point of Queen Charlotte islands and faces the open Pacific.

In its general aspect, the coast in the area examined is very similar to that to the south previously described. It is intersected by numerous inlets which, however, have as a rule a more nearly east and west direction, often branching abruptly to the north, especially near their heads. The mouth of Kingcome inlet is completely hidden behind a network of islands, of which Broughton is the largest, but between it and Smith sound the shore line is singularly continuous, with few off-lying islands. Beyond the latter point they form a continuous chain, parallel with the coast, thus affording a well sheltered channel for steamers.

GEOLOGY.

An excellent résumé of the geology of the coast from Powell river to Kingcome inlet was given by Mr. Bancroft in his preliminary report for 1907, and as the area under consideration presents the same general features, little need be added in the present instance.

The Coast Range batholith was intruded during Upper Jurassic times, and subsequent erosion has removed almost the entire rock roof which covered it at that time. It now stands exposed, and forms the principal feature of the geology of the British Columbia coast.

Where the process of erosion has been arrested in time, we find remnants of the old roof in the form of more or less highly metamorphosed rocks; chiefly schists, cherty argillites and limestones. Their strike is variable, but as a general rule approximates N. 30 W., which is parellel to the axis of the range, and the dip is usually high to the northward.

Examples of these roof pendants were found in Drury inlet, Actæon sound, Seymour inlet and Nugent sound, possibly in this case representing a continuous belt stretching across the intervening country, since they lie roughly along the same line.

These occurrences are of great economic importance, as the altered roof remnants are always mineralized to a certain extent, and may be expected in some cases to yield valuable results when carefully prospected. There are many exposures of similar argillitic rocks and limestones along the shore between the West arm of Moses inlet and the entrance to Fitz Hugh sound. They were also observed in several other localities.

From the greater part of the area, however, the roof has been completely removed, leaving the batholith exposed, and it is possible to observe the changes which have taken place within the magma during its intrusion. As seen towards the heads of the larger inlets, where these have penetrated into the hearts of the range, the batholith appears to have been originally, in its upper portions at least, a light, medium to coarse grained granite, containing rather more hornblende than biotite; but elsewhere it presents many differentiations, which in some cases have been due to segregation in the magma itself, and in others are possibly due to its having dissolved and assimilated portions of the roof material during its intrusion.

In some cases the magma has been unable to assimilate the engulfed blocks, hence these remain embedded as highly altered inclusions, but still preserving their stratified character. An example of this was noted on an island of the Southgate group, the included blocks being quite large, 20 feet or more in length. But in nearly all the observed cases the evidence might be taken as indicating assimilation of the engulfed roof material. This may show itself in the occurrence of areas of a more basic facies of the granite, of gabbro, or even of an almost pure, coarsely crystallized hornblende. Broughton island is composed largely of such basic rocks, which also occur extensively along the main coast and in many of the inlets. It is not supposed that these basic differentiations are all to be explained in the above manner; they no doubt very often represent segregations from the original magma.

In other cases where assimilation seems to have taken place, diffusion has not proceeded sufficiently far to produce a homogeneous solution, and the rock after solidification presents a blotched or striped appearance, which at times is very striking. All possible gradations between the light acid granite, containing only a few dark inclusions, and the homogeneous basic gabbroid differentiations, are met with continually.

Following the granitic intrusion there have been at least three distinct periods of dike formation, the earliest of these having produced aplites, which were then succeeded by two sets of dark basic dikes.

The occurrence of a small area of conglomerate, probably of Tertiary age, was observed in Millbrook cove, Smith sound. No microscopic examination of the specimens collected has yet been made, but some included granite is apparently identical with that found in place in the neighbourhood.

Although search was made for fossils wherever sedimentary rocks occurred, none were found. It is therefore impossible to state definitely to what period these belong. From their similarity to the corresponding rocks in the area covered by Mr. Bancroft's report, in which fossils of Triassic age were found in five localities, it is very probable that some stratified rocks in this season's area also belong to that period, others may represent remnants of Devono-Carboniferous formations, which Mr. O. E. LeRoy has noted as occurring on Texada island and elsewhere.

It might be expected that, in some instances at least unconformities might be found within such patches, representing as they do isolated portions of the stratified rocks, which, in early Jurassic times, blanketed the whole of this district; but although careful attention was directed to the possibility of such an occurrence, no evidence was forthcoming to suggest that the rocks within any one patch were not laid down in a single geological period.

The general elevation of the Coast Range in this area, as judged by the mountains forming the shores towards the heads of the longer inlets, is from 4,000 to 6,000 feet, but at the mouths of the inlets and along the main coast, the country is considerably

lower, and wherever the more easily weathered limestones and argillitic rocks occur in any quantity, the effect of erosion on the topography of the country is very pronounced.

Drury inlet may be mentioned as a remarkable instance of an inlet running due west. It is a comparatively shallow channel, and the country for many miles around is low, being more nearly related in its topographic features to some of the island scenery than to that of the fiords. This inlet has indeed narrowly escaped forming an island, its head being only about two miles distant from the main coast.

ECONOMIC GEOLOGY.

There are no mines in the district, and very little prospecting appears to have been carried on at any time. The timber and salmon fishing industries have proved more attractive in the past, while at the present time, prospectors are turning their attention to the Queen Charlotte islands, which lie off the coast, a little farther north. The only place at which mining operations were being carried on at the time of our visit was at Bella Coola at the head of North Bentinck arm. The northern shore of the latter is formed by a mountain rising 5,700 feet above the sea, and several claims have been staked along a band of highly altered green schists which occur near the summit. These have a general north-easterly strike, and are bounded on each side by the granite which forms the mass of the mountain. The schists are mineralized with sulphides of iron and copper. Some assays of the ore are said to run as high as 9·6 per cent copper as well as something in gold. Mr. Scribner had two men working on one of the Bella Coola group of claims during the summer, while the North Coast Copper Company had driven in two tunnels on a similar proposition, but had suspended operations prior to our arrival.

In Kilbella bay, Rivers inlet, a patch of limestones in the gneissoid granite includes a seam of massive magnetite which was staked some years ago, but abandoned after a shaft had been sunk 100 feet. The width of the magnetite near the shore varies up to about a foot, and it is said to have been traced back into the mountain for 1,800 feet. It is probable that a further examination of this property will be made shortly.

There is a somewhat similar occurrence of magnetite near the head of Seymour inlet, on its eastern shore opposite Wigwam bay.

The granite along the south shore of Bramham island maintains an even grey colour over a large area. There are few inclusions, and dikes are rare. It is dissected by joint planes into rectangular blocks and would make an excellent building stone which could be conveniently shipped from Miles inlet.

Our season was curtailed a week or two owing to an unfortunate accident which necessitated our beaching the launch for repairs, after which it was thought advisable to return to Vancouver.

It might be well here, to call attention to the inadequacy of the existing charts for the purposes of a geological survey, in a portion of the territory covered this year, and also along the coast immediately north, as far as the International Boundary, Although the main coast from Seymour inlet to Fitz Hugh sound is well charted, on a scale of about one inch to the mile, the inland waters have been mapped from a sketch survey only, and the greater part of Smith and Boswell inlets and the whole of Naysash, Mereworth and Belize inlets have never been surveyed at all. Beyond Fitz Hugh sound, the only charts at present available are on a scale of about 4 miles to the inch, and in the case of a large portion of Burke and Dean channels, representing some 200 miles of shore line, the scale is 15 miles to the inch. This renders even an approximate location of contacts and other data almost impossible.

THE BULKLEY VALLEY AND VICINITY.

(W. W. Leach.)

During the past season the work undertaken in this district was chiefly in the upper parts of the valleys of the Morice and Zymoetz (Copper) rivers, though some time was spent in collecting sufficient geological and topographical information for the compilation of a new and enlarged edition of the map published last spring.

MORICE RIVER DISTRICT.

As the season was exceptionally late, it was found necessary to spend the earlier part of it in the lower levels; the valley of Clarks fork of the Morice being the first point to be visited. This stream rises with the south fork of the Telkwa, near Howson camp, in a wide, flat pass with an elevation of about 3,600 feet, thence its course is nearly due south for a distance of about 20 miles, when it unites with the main Morice river. Its chief tributaries are Starr creek, Goldstream, Gabriel creek, and a large unnamed creek coming in from the east a few miles below Gabriel creek. From the mouth of Gabriel creek down, the valley is wide, the hills on either side being comparatively low, with gentle slopes, while the grade of the stream itself is not great.

Geology.

From the pass southward to about one-half mile below the mouth of Gabriel creek, the rocks met with consist of the volcanics of the Porphyrite group (underlying the coal-bearing beds), except for a short distance midway between Starr creek and Goldstream, where the basal conglomerate of the coal series crops. It appears, however, that here the coal seams have been almost entirely eroded.

A short distance below Gabriel creek, the conglomerates again outcrop on the west side of the river, for a distance of at least eight miles, that being as far south as the valley was explored. Along this stretch the river follows pretty closely the strike of the rocks, near, but usually a little west of a synclinal axis. On the west side the dip of the strata is very low, conforming more or less to the slope of the hills. Practically the whole of the coal measures above the conglomerates has been lost by erosion. On the east side of the valley, however, the hills have a steeper slope; the dips are quite low and the synclinal axis is roughly parallel to, and some distance to the east of, the river bottom. Taking these facts into consideration, it was thought probable that an important coal basin might be found on the east side of the valley. Some days were spent, therefore, in carefully examining a number of small creeks on the east side, with the result that the conglomerates were found outcropping at from one to one and a half miles back from the river, at elevations varying from 400 to 600 feet above it, and with westerly dips. The conglomerate here appears to reach a much greater thickness than where observed elsewhere in this country. Two distinct beds were noted, the lower about 100 feet thick, and the upper probably 30 or 40; they are separated by about 50 feet of soft sandstone. On a small creek, about one mile below Gabriel creek, and about one mile from the river, the coal-bearing shales were seen overlying the conglomerates. Two coal seams were here found, the lower one showing 3 feet of coal, with no roof, while the upper one gave the following section:—

Clean coal 12″.
Shale, 4″.
Coal, 3′-6″.

Later on in the season this point was again visited, when it was found that during the interim Messrs. C. B. Clark and T. Howson had done considerable prospecting in the vicinity, and staked a number of coal claims. They had opened up what is undoubtedly the upper of the above-mentioned seams, at several points, showing it to be about ten feet thick and dipping to the west at thirty degrees. At none of these openings had they reached below the level of the surface waters, the coal in all cases being wet and decomposed, so that any sample taken at that time would hardly give a fair idea of the character of the coal. The seam, however, appeared to be quite regular, except at one point, where a slight local disturbance was noted.

The following analysis is from a sample taken under the conditions already mentioned. It can be confidently expected that the percentage of moisture, and probably of ash, will be materially reduced in a sample taken under more favourable circumstances:—

Moisture	10·81
Volatile combustible matter	31·22
Fixed carbon	48·62
Ash	9·35

Coke: non-coherent.

This area appears to be one of the largest in a district where the coal beds occur, as a rule, in small basins. Although the seams were opened up at one point only, still there is little doubt that this basin extends down to the forks of the Morice, and probably widens out below the place where the seams were stripped, at which point it is approximately three-quarters of a mile in width.

The general attitude of the strata is quite regular; the valley is wide, with an easy grade, and no serious engineering difficulties need be looked for in the construction of a branch line of railway down the Morice river, to connect with the main line of the Grand Trunk Pacific. There is a plentiful supply of timber in the valley for all future mining purposes.

Goldstream Coal.

On Goldstream, to the north-west of this area and separated from it by a short distance only, another important coal basin is found, which was briefly described in last year's Summary. Since then, however, the locator, Mr. F. M. Dockrill, has opened up the seams at several new points, which proves this basin to be at least as large, and probably larger than it was estimated to be last year, viz., two by two and one-half miles.

The following results are from analyses made of samples taken this season:—

	Moisture.	Vol. Comb. Matter.	Fixed Carbon.	Ash.
(1) 8 ft. seam	4·67	30·55	55·23	9·55
(2) 6½ ft. seam	6·36	28·36	58·75	6·53
(3) 3½ ft. seam	6·86	27·24	59·47	6·43

Coke: non-coherent in all cases.

All these samples were from surface coal, so that the percentage of moisture is in all probability higher than what will be found at greater depth.

ZYMOETZ RIVER DISTRICT.

Two other coal areas were examined rather hastily, both on that branch of the Zymoetz river which rises with Pine creek near the Hudson Bay mountains.

Glacier Creek Area.

The first of these is situated near the head of the river, which here occupies a wide, marshy valley. The coal-bearing beds were seen cropping in the bed of Glacier creek, a small stream rising in the Hudson Bay mountains and entering the Zymoetz from the east. The contact of the conglomerate and the underlying volcanics is at an elevation of from 500 to 600 feet above the valley, and at this point the strata are very highly flexed and otherwise disturbed, but have general high westerly dips. Following down the creek from the contact, it was seen that everywhere the rocks have been severely folded and faulted till near the flat, where they become more regular, dipping under the valley to the west at about twenty degrees.

Some time was spent here in an endeavour to uncover a workable coal seam, but without success, although a number of small seams, from four to nine inches thick, were stripped. It would appear probable that the large seams of Goat creek are here split up into a number of small ones, though it is possible that larger ones do exist, whose outcrops are covered deeply with drift.

The coal here is very hard, with all the appearance of an anthracite, but the one sample taken showed by analysis such a high percentage of ash as to render it useless.

Coal Creek Area.

About eighteen miles from Glacier creek, down the Zymoetz river on its north-west bank, another area of the coal-bearing beds is met with. The best exposures are seen in a small stream from the north-east, locally known as Coal creek, which cuts the strike of the rocks at a wide angle. The beds here appear in the general form of a shallow syncline, with a general strike nearly north-west and south-east; but there are many minor undulations and the strata were seen to be faulted in a number of places. The width of the basin is probably about two miles, but its extent along the longer axis was not seen, though it is fairly certain that it does not go any great distance south-east of Coal creek. To the north-west the country has a gentle slope, is heavily drift-covered, and for a considerable distance there are no transverse valleys, so that it was found impossible to trace the coal-bearing beds farther in that direction, in the time available.

A number of coal claims have been staked here by Mr. J. Ashman, but so far little or no work has been done. Two small seams only were seen outcropping in the bed of Coal creek, about one and a half miles above its mouth. The lower of these showed 3 feet of clean coal, while the upper one was 1'-4" in thickness. Mr. Ashman has since informed me that he overlooked another seam that had been uncovered a short way from the bank of the creek and farther up-stream, which was about 5 feet thick, with a small parting. The following analysis is from a sample from the lower or 3 foot seam:—

Moisture	5·45
Volatile combustible matter	34·03
Fixed carbon	48·17
Ash	12·35

Coke: partly fritted.

On the other coal properties, which have been described in previous reports, no new work has been undertaken during the past year, as all the owners of the lands in question are waiting for railroad construction, before going to the expense of further development.

MINERAL CLAIMS.

During the past season comparatively few prospectors were in the district, and new discoveries of importance were rare, while on the older and better known properties little work was attempted, except the annual assessment work required by statute.

On the Hudson Bay mountains, more particularly on their western slopes, a number of claims are located and a large amount of prospecting has been done. The geological conditions here are very similar to those in the neighbourhood of the copper claims of Howson and Scallon creeks, described in previous reports, the ore occurring in dikes from or near the edge of an eruptive area.

The northern part of the Hudson Bay mountains is composed of rocks of the Porphyrite group, chiefly volcanics (andesites, tuffs, etc.), but including, towards the top of the series, some sedimentary beds. These rocks have been very severely folded and crumpled; some splendid examples of folding on a large scale showing very plainly on the bare rocky walls of the higher peaks. Towards the southern end of this group of mountains, extending nearly down to the Telkwa river, there is a large intrusive area of granite-porphyry, which has shattered, diked and altered the volcanics near its edge to a very large extent, thus affording channels for the ascent of mineral-bearing solutions.

Most of the chief showings are on a group of claims which are quite close together, and reached by a number of short branch trails from the main Aldermere trail.

Coronado Group.

On the Coronado group a considerable amount of work has been done, consisting of open-cuts, by means of which the vein can be traced for the length of two claims The ore occurs in what appears to be a dike from the intrusive porphyry area, striking about north-east, with a nearly vertical dip, the strike conforming very closely to the slope of the mountain, here very steep. At the lowest opening a cut has been made 35 feet long and 12 feet deep at the face, exposing a lens of almost pure galena, varying from 14 inches in width at the face, to nothing, 12 feet back from it. Four and one-half tons of galena were shipped from the opening to a smelter, but the writer was unable to hear with what result. On the western or hanging wall there are about 3 feet of siliceous vein filling, carrying a little pyrites. A specimen of the clean galena gave by assay: gold $1.20; and silver 62·63 oz., to the ton.

In the other cuts, farther up the mountain, the ore shows much less galena, but the mineralization is fairly heavy as a rule, one opening exposing about 4 feet of ore with no walls, the ore consisting of galena, blende, arsenical pyrites, pyrites, and lead carbonate in a quartzose gangue, but all much decomposed. A sample from this point assayed as follows: gold $10; silver 3 oz., to the ton.

Near the eastern boundary of the Coronado, on the west bank of Sloan creek, a similar and parallel ore body has recently been discovered. Here a lens of galena, nearly pure, but carrying a little blende and chalcopyrite, has been uncovered, the greatest width of solid ore being 14 inches. This vein has been traced about 200 feet along the strike to the north-east; but as only the surface dirt has been removed in two or three small holes, the character of the ore could not be definitely seen. A specimen of the solid galena on assaying, gave: gold $4.40; silver 36.47 oz., to the ton.

Victor Group.

The Victor group, consisting of the Standard, Victor and Triumph claims, is situated west of the Coronado. The ore occurs in and along the east wall of a dike about 60 feet wide, striking about north-east, and dipping at 80 to 90 degrees south-west. It has been traced by means of open-cuts up the hill for a considerable distance. In the lowest cut about 3½ feet of ore are exposed, consisting of galena, blende and pyrites, irregularly and rather sparsely distributed in a gangue of altered dike rock and a little quartz. The ore appears to follow a line of faulting and shearing parallel to the walls of the dike. Fifty feet up the hill the ore has narrowed down to about 8 inches, with 3 inches of clean galena, a specimen from which assayed: gold, trace; silver, 43.33 oz. per ton.

Continuing up the hill, a number of superficial cuts show the dike rusty and decomposed, and varying from 12 to 60 feet wide, with mineralization strongest along the hanging wall. In one of these cuts about 2 feet of ore was seen, composed of blende, arsenical pyrites, with a little galena and chalcopyrite. At the highest opening up the mountain, about 2½ feet of ore is exposed, here highly decomposed and consisting of stringers of galena, associated with much lead carbonates. A sample from this point gave the following results by assaying: gold, 20 cents; silver, 39.20 oz. per ton.

Dominion and Newcastle Group.

The Dominion and Newcastle claims are located on the east bank of Sloan creek, near its head. On this property a dike about 6 feet wide cuts the country rock, consisting of greenish and grayish andesites. The dike, with nearly vertical dip, has the usual north-east strike, and where opened up by means of a shaft and several open-cuts, is very heavily mineralized, the chief constituents of the ore being blende, arsenopyrite, iron pyrites, a little chalcopyrite and a very little galena, in a gangue of altered dike rock and much quartz.

Two samples were taken here, the first consisting of the general run of the ore, while the second was from a band of almost pure arsenical pyrites; the results by assay are as follows: (1) gold $5.80, silver 12.40 oz.; (2) gold $3.60, silver 0.55 oz.

Humming Bird Claim.

On the Humming Bird claim very little work has been done (by no means sufficient to prove the extent of mineralization) consisting of several small cuts, the chief one of which is about 15 feet wide, with neither wall uncovered. The rock is much decomposed, with a considerable quantity of a black, earthy material on the surface, which in the laboratory was proved to consist largely of pyrolusite. Beneath this decomposed material the ore is composed of blende, arsenical pyrites, galena, and iron pyrites in a felsitic gangue of altered dike rock, much shattered and brecciated; the mineralization being irregular and somewhat sparse. An assay of a sample from this cut gave the following results: gold 60 cents; silver 10.37 oz. per ton.

Limestone.

As limestone suitable for smelting purposes has not before been noted from this district, the discovery of a bed of good quality may be of interest. This limestone occurs on the north side of the pass followed by the old trail from Moricetown to Hankins camp, on the Zymoetz river, and not far from the summit. As the only outcrop seen was in heavy timber it was impossible to ascertain the thickness of the bed, but it would appear to be of good size. The following analysis was made in this office:—

	Per Cent.
Insoluble matter	1·31
Fe_2O_3 Al_2O_3	1·30
Ca CO_3	92·41
Mg CO_3	3·63

As the writer was on the point of leaving Hazelton for Ottawa, a number of samples of ore were brought in from a reported discovery near that town. The ore consisted chiefly of stibnite, and gray copper. As the snow was then deep in the mountains it was not possible to investigate this new find at that time.

NORTH-WESTERN PORTION OF TEXADA ISLAND.

(R. G. McConnell.)

The work of the past season consisted of an examination of the geology, working mines and prospects on the north-western portion of Texada island, B.C.

This important island has been visited at various times by members of the Geological Survey, notably by Richardson, Dawson and LeRoy, but no general detailed examination has heretofore been undertaken. A reconnaissance topographical and geological map prepared by Mr. LeRoy was published by the 'Survey' in 1907.

Texada island is situated in the Strait of Georgia near the mainland, about 50 miles north of Vancouver. It has a length of 30 miles, a maximum width of 6 miles, and a total area of about 125 square miles. The south-eastern portion consists of a high, irregular ridge surmounted by occasional peaks rising to a height of nearly 3,000 feet. Going northward the general elevation decreases and the topographic outlines become more regular. The surface is rough and rocky over the greater portion of the island. Rolling boulder plains, usually of limited area, occur at a few points, mostly towards the northern portion of the island.

The streams are small and most of them have carved out canyon-shaped valleys of moderate depth. Small lakes dating from the glacial period occur at a number of points.

The island was originally well forested throughout except on the summits of the higher ridges and peaks, and notwithstanding the usual ravages by forest fires and the large quantity cut for commercial purposes, the timber resources are still considerable. The forest is open and consists mostly of Douglas fir. The trees of this species on the island usually range from 2 to 4 feet in diameter, although occasional specimens attain a diameter of 6 feet and rise to a height of over 150 feet. Besides the Douglas fir, the conifers are represented by the hemlock, spruce and two species of pine and cedar. The principal broad-leafed trees are the alder, maple and arbutus.

GEOLOGY.

The rocks represented on the island consist in order of age (1) limestones, (2) a series of basic, predominantly porphyritic rocks often passing into breccias or agglomerates, (3) small stocks and dikes of dark basic rocks the character of which has not been determined, (4) granites and grano-diorites, (5) clays, sandstones and shales of Cretaceous age. No Tertiary rocks, either sedimentary or volcanic, were identified, and the Cretaceous deposits are followed by the sands, clays and boulder clays of the glacial period.

The limestones, the most important formation economically, occur mostly in the northern portion of the island. A band usually a mile or more in width follows the south-east coast from Point Marshall southward to Sturt bay and a short distance beyond, then bends almost at right angles and extends in a south-westerly direction nearly across the island. A second area measuring about 2 square miles in extent occurs in the vicinity of Davies bay on the west coast, and other small areas are frequently found in the vicinity of the larger masses as inclusions in the surrounding porphyrites and associated rocks.

The limestones occur characteristically in heavy beds often 6 or 8 feet in thickness. The beds undulate in easy folds, and except where broken by small faults or thrust up by dikes, are seldom steeply tilted. They are cut everywhere by steep, often

vertical jointage planes. These are so strong and persistent that in many places they simulate bedding.

Normally the limestone is bluish in colour and fine grained, almost compact in texture. Exposures of this character are, however, infrequent, as most of it has been altered into moderately coarse, grayish and white crystalline limestones and marbles. In the vicinity of some of the ore bodies small areas of limestone are completely replaced by coarse white calcite.

The limestone when unaltered is remarkably pure and furnishes an excellent lime. This has led to the erection of six kilns at the northern end of the island with a capacity of somewhat over 550 barrels per day.

The porphyrites and associated rocks outcrop over the greater part of the island. All the peaks and ridges examined in the southern mountainous portion are built almost exclusively of these rocks, and they alternate with the limestones in the lower northern portion.

The porphyrites, while apparently all belonging to the same period of volcanic activity, vary greatly in character in different parts of the field. They have not been examined in thin sections and can only be briefly described here. The prevailing type is a brownish weathering, moderately coarse green rock usually considerably altered and epidotized. The feldspar phenocrysts are seldom fresh and are often replaced by calcite or calcite and epidote. The ferro-magnesian minerals are rarely conspicuous as phenocrysts. While the prevailing type is distinctly porphyritic, greenish compact and finely granular varieties also occur.

Along the west coast and at points in the interior the porphyrites alternate with and apparently pass into breccias or agglomerates made up of angular and sub-angular fragments of porphyrite enclosed in a porphyrite matrix. These rocks contain no foreign material and probably originated largely from the breaking up of a porphyrite crust by subsequent intrusions of the same or a similar magma.

The porphyrites are cut by small gold-bearing quartz veins, and also contain numerous magnetite lenses always carrying a small percentage of copper.

The porphyrites and limestones are cut by numerous dikes and stocks, usually of small areal extent, of dark intrusive rocks. Macroscopically these appear to range from dark augite porphyrites to gabbros. They are closely associated with the copper deposits and are often bordered by ore bodies.

Granites probably connected with the Coast Range batholith occur at a number of disconnected points on the east coast, and also at one point on the west coast some distance north of Gillies bay. They present the usual variations in composition, varying in this respect from typical biotite granites to grano-diorites and probably also to diorites.

The granites, with the exception of a few small dikes, are the latest intrusives on the island. They are succeeded by sedimentaries of Cretaceous age. These consist mainly of soft sandstones passing in places into conglomerates, and clay and shales containing a few calcareous nodules. A bright red clay occurs at the base of the formation at a couple of points. The beds are nowhere steeply tilted and in most of the exposures seen the dip does not exceed 5°.

Cretaceous rocks are exposed at several points on the west coast, the largest area occurring in the vicinity of Gillies and Lower Gillies bays. No coal seams were seen in the surface outcrops, and a bore-hole put down some years ago on Lower Gillies Bay creek proved unsuccessful in finding them in depth.

The Cretaceous rocks are succeeded by boulder clays of glacial age, no deposition of sedimentaries or intrusion or extrusion of volcanics have taken place so far as known in the long intervening period. The glacial deposits, consisting of boulder clays occasionally underlaid by sands and clays, are distributed irregularly over most of the island up to an elevation of 1,200 feet. Above that they thin out and on the summits of the higher peaks and ridges are represented only by occasional erratics.

The presence of these on the highest points shows that the whole island was totally submerged by ice. Well marked grooves and striæ indicating a general south-westerly movement of the ice occur on Surprise mountain and at other points.

MINERAL DEPOSITS.

The northern portion of Texada island, the only portion examined during the season, is widely mineralized and has been pretty completely staked as mineral claims in the various excitements which have overrun the island. Of the hundreds of claims staked many have been abandoned, a considerable number are still held in a more or less undeveloped condition, and a few have attained the status of producing mines.

Only a brief description of the mineral deposits is attempted as neither the rock nor mineral specimens collected have yet been examined.

The deposits worked include quartz veins containing free gold, lenses of copper-gold ores, mostly replacements in limestones, and lenses of magnetite usually carrying some iron and copper sulphides.

Work on the gold-quartz veins, most of which cut the rocks of the porphyrite group, proved disappointing and has now almost entirely ceased. The known veins with few exceptions are small and non-persistent, and the general tenor in gold is low, although small rich shoots carrying high values are occasionally found. The total output of the gold quartz veins to date is probably less than $20,000.

The exploration of the copper-gold lodes has been attended with better results. These occur in limestones and are usually situated either at the contact with or in the vicinity of masses of granite, or of the older basic intrusives referred to in the geological sketch. They all belong to the class known as contact metamorphic deposits, and represent replacements of limestone and occasionally of a portion of the bordering intrusive by copper minerals, chiefly chalcopyrite and bornite, accompanied by garnet, augite, epidote, serpentine and various other silicates.

Among the more important mines working in deposits of this character are the Marble Bay, Cornell, Copper Queen and Little Billy in the vicinity of Sturt bay, and the Loyal Lease at the north end of the island. Occurrences of chalcopyrite ore have also been worked to some extent at various points along the Iron range on the west coast.

The Marble Bay mine, the principal copper-gold mine working at present, is described in considerable detail by Mr. LeRoy in a report published by the 'Survey' in 1907. At the time of his visit the workings had reached a depth of 760 feet; since then they have been continued down to a depth of 920 feet.

The ore bodies in this mine have the irregular outlines characteristic of replacement deposits, but are unusually large and persistent considering their richness. The ore bodies first worked extended from near the surface down to the 260 foot level and for some distance beyond. At the 260 foot level a new ore body was discovered in a drift to the westward and has been followed continuously downwards for a distance of 530 feet. It terminated against limestone at a depth of 790 feet. Below it the workings are barren for a distance of 70 feet. At the 860 foot level rich ore was again encountered and has been followed to the present 920 foot level. At this level, the lowest reached, the ore body has a width in places of over 20 feet and is rich in bornite.

The ores consist mainly of the two copper sulphides bornite and chalcopyrite, enclosed in grains and small masses in a garnet-augite gangue. The shipping ores carry about 8 per cent of copper, and while varying to some extent on the different levels, the general average has remained practically unchanged from the surface down to the present level. The gold values are high, the whole yearly output averaging about $10 per ton.

The ore bodies of the Marble Bay mine occur in limestone cut by numerous basic dikes and are situated at some distance from large intrusive stocks. The dikes where

they cross the ore bodies are always altered, and occasionally are partially replaced by the same minerals which occur in the limestone, showing that they are older than the mineralization. The limestone is brecciated in places and is traversed by numerous fissures running in different directions and often crossing each other. It is probable that these controlled the mineralization, to some extent at least, as most of the ore bodies have been found by drifting along or sinking on them.

The Cornell mine is situated about a mile south of Van Anda. The limestone is intruded here by a long narrow basic stock and the ore bodies occur along the contact of the two rocks. The workings of this mine consist of a shaft sunk to a depth of 460 feet, with long drifts at intervals of 100 feet. Several important ore bodies somewhat similar in character to those of the Marble Bay mine have been discovered and mined. During the past season the Cornell, after being idle for some time, was re-opened under lease by Dr. Tanzer. The drift at the 360 foot level was extended along a fissure for a few feet and reached what is considered to be a new ore body, although it may be an extension downwards of one of those mined on the upper levels. The unsuspected presence of this bornite-chalcopyrite mass near the end of an old exploratory drift illustrates the erratic and uncertain distribution of the ore bodies, and also furnishes an incentive for further exploratory work.

The Cornell ores, like those of the Marble Bay mine, carry good and often high values in both copper and gold.

The Copper Queen mine was not examined. It has been idle for some time and the workings are partially filled with water. This mine has been worked to a depth of 750 feet, and rivalled the Marble Bay in the extent and richness of its ore bodies. It has, however, latterly been worked under lease with the usual result. Exploratory work, even the extension downward of the shaft, has been neglected, and a considerable expenditure would be required to put it in a condition to continue the search for new ore bodies.

The Copper Queen mine is situated in a limestone area traversed by numerous basic dikes, and is distant about 1,600 feet from the nearest intrusive mass.

The Little Billy mine differs from the other mines in the neighbourhood in occurring at a limestone-granite contact. It has not been explored in depth, and so far only one moderate sized lens has been mined. A shaft was sunk during the season on a second ore body outcropping in the limestone a short distance away from the contact, and a few tons of ore were shipped.

The geological conditions at the Loyal Lease, situated in the north end of the island, are similar to those at the Marble Bay and the Copper Queen. The croppings occur in limestone cut by numerous basic dikes and intruded at various points by small basic stocks. A number of small lenses outcrop at the surface, and shafts have been sunk on these to varying depths. Some ore has been shipped, but notwithstanding the favourable prospects no large ore body has so far been found.

On the west coast of the island, lenses of rich copper ore have been mined at a number of points along the Iron range. The lenses occur in limestone along both the granite and porphyrite contacts, and are often found fringing the magnetite ore bodies. They are small and so far, with the exception of some development work at the Lake mine, no attempt has been made to explore them in depth. The ores, while apparently similar in origin to those mined in the vicinity of Van Anda, differ in consisting altogether of chalcopyrite. The gold values are also smaller.

IRON ORES.

Lenses of magnetite are widely distributed on Texada island. On the south-west coast numerous outcrops occur north-west of Raven bay, and extend in diminishing number south to Pocahontus mountain and northwards to Sturt bay. The lenses are all of moderate size and vary in shape from rounded irregular masses to long vein-like forms bounded by walls and evidently deposited along zones of fissuring. They occur

in the main limestone area, associated with small limestone inclusions in the porphyrite, and in the porphyrite itself. The magnetite is seldom pure and is usually intergrown with appreciable quantities of pyrite, chalcopyrite and more rarely pyrrhotite.

The principal iron deposits on the island occur on the west coast nearly south from Van Anda at what is known as the Iron mine. The limestone here is intruded on the north by grano-diorite and on the south by augite-porphyrite, and a zone of magnetite lenses follows the winding contact between the limestone and both igneous rocks for a distance of about 2 miles. The lenses are not confined strictly to the contact and occur in all three formations at some distance from it. They are often of large size, in some cases exceeding 200 feet in length. The impurities consist mainly of iron and copper sulphides in varying proportions. The ore in some of the smaller lenses, and a part of that in the large Lake mine deposit, is comparatively pure; but most of it will probably require to be roasted before treatment.

Considerable time was spent during the season on the Iron range, and a number of maps showing the principal deposits have been prepared and will be published with the detailed report. The abundance of the ores, their high grade in iron and easy accessibility must make them extremely valuable in the event of an iron industry being established on the coast.

TOPOGRAPHICAL WORK ON TEXADA ISLAND, B.C.

(F. H. MacLaren.)

I left Ottawa on May 9, for Texada island, accompanied by Mr. Hugh Pedley, of Montreal, who acted as topographical assistant during the summer.

The first month in the field was spent in making a topographical map of an area which includes the Marble Bay, Cornell, Copper Queen and Little Billy mines. These are the four principal copper mines on the island.

The area covered by this sheet is about 1·5 square miles. The work will be published on a scale of 800 feet to an inch, with a 20 foot contour interval.

The second detailed map attempted was that of the Iron range. This sheet covers an area of about 0·5 square miles. It will be published on a scale of 200 feet to an inch, with a 10 foot contour interval. All roads, mine tramways, buildings, shafts, tunnels, prospects, mine dumps, streams and open-cuts are shown.

A general map of the island was started this year and will be completed next season. This sheet will be worked out on a scale of 2,000 feet to an inch, with a 50 foot contour interval. About 65 square miles were covered by the party this summer.

A topographical assistant, two rodmen, and a cook comprised the party engaged in this work.

SOUTH-EASTERN PORTION OF VANCOUVER ISLAND.

(Charles H. Clapp.)

INTRODUCTION.

The instructions given in regard to field work during the season of 1908 were, to proceed to Victoria, B.C., and commence a geological and topographical survey of the southern portion of Vancouver island, the work to be largely of the nature of a reconnaissance, but detailed where advisable. I was to prepare a general map of the entire area explored, also small, large-scale maps of particular mining localities, at other districts where detailed geological work was done. In addition, I was requested to make a careful study of the geology about Victoria, with its easily accessible environs, in order in my final report illustrating the geology of Vancouver island to include a chapter on that particular area.

I was late in starting for the field, leaving Ottawa June 21, in company with my assistant, Mr. Kenneth Chipman. We arrived at Victoria on June 26, where we outfitted, secured the services of Mr. George Penketh, of Victoria, as teamster, and left for the field on July 1.

Three excursions were made: one of two weeks, on the Saanich peninsula; one of three weeks in the district of Esquimalt, Metchosin, Sooke, and west along the coast to Point No point; and one of five and a half weeks in the districts of Goldstream, Malahat, Shawnigan, Helmcken, Cowichan, Quamichan, Sahtlam, Comiaken, Somenos, Seymour, Cowichan lake, Chemainus, and Oyster. On the last two trips Mr. James Caffery, of Sooke, gave me very valuable assistance as guide and helper. Although the weather was still favourable, the writer was compelled to leave the field by the middle of September in order to resume instructional duties at the Massachusetts Institute of Technology. The season was, therefore, very short.

In general, an area confined entirely to Vancouver island was mapped, covering the south-eastern portion, north to the 49th parallel, which crosses the island near Ladysmith, and west to the 124th meridian, which passes through Point No point. The area is somewhat less than 1,000 square miles. The photographic method of mapping was used, Mr. Chipman doing a great deal of the topographic work, as well as assisting in the geology.

The geological work was necessarily of a very hurried nature, but the general extent of the formations and their relations have been determined. As considerable work has been done both by the Geological Survey and by private parties on the Coal Measures and surface geology, special attention was given the metamorphic rocks—Dawson's Vancouver Series. More detailed work was done on the Sooke peninsula and at Mt. Sicker. As the geology in the immediate neighbourhood of Victoria is exceedingly obscure, requiring for its satisfactory solution the most painstaking field work, based on a previous petrographic knowledge of the rocks of the vicinity, it was thought best not to spend the time on the problem during this, my first summer on the island. Instead, I have collected material for a special report on the country between Esquimalt and Sooke harbours; which district is easily accessible from Victoria, is traversed by good roads, and the geology is not only more simple but more representative of the geology of the whole island.

Little previous work, especially of a general or correlative nature, has been done on the island. In the seventies, Drs. Selwyn and Dawson made one or two very hurried reconnaissances in the neighbourhood of Victoria and Leach river, and Mr.

James Richardson worked up, in a rather cursory manner, the Coal Measures of the east coast. In 1885, Dr. Dawson made an examination of the northern part of Vancouver island, and in the 1886 report of the Geological Survey, made the most valuable published contribution to the geology of the island. Since then, Mr. Arthur Webster and Mr. Ernest Haycock made a hurried reconnaissance of the west coast in 1902; and Dr. Poole, in 1905, examined the coal fields of the east coast. Notes on certain mining districts and mineral claims have been made by the provincial mineralogist, Mr. W. F. Robertson, and the provincial assayer, Mr. Herbert Carmichael. Several short papers have been given by Messrs. W. M. Brewer and W. F. Best, in the Journal of the Canadian Mining Institute, on the mining geology of particular localities on the island. More or less private and unpublished work has been done, notably by Mr. W. J. Sutton. As yet, little attention has been given by the writer to the work of these men, and no work has been done on the collections of rocks and ores made this summer, so that the following sketch is based entirely on unrevised field notes, and should, therefore, be considered as only preliminary in character.

TOPOGRAPHY.

The topography of the south-eastern part of Vancouver island is in general that of a heavily wooded, low mountain region. It is in rather marked contrast to the more rugged and higher mountainous districts to the north and west. The eastern coast is marked by low rocky hills and mountains, with occasional broad, flat areas underlain by the softer rocks of the Coal Measures. The southern and western coast is more bold and rocky, although in the neighbourhood of Victoria and Esquimalt, and south-west to William head, the rock headlands are low and are separated by low, flat, drift-filled valleys. From William head west to Point No point, with the exception of the north shore of Sooke harbour, and several small patches underlain by the softer Tertiary sediments, the shores, although not very high, seldom more than 500 or 600 feet, and usually less, are steep and rugged. The coast line is deeply indented, a fiord coast. Although along the west coast several of the inlets penetrate into the very heart of the mountains in the region we are considering, the Saanich inlet is the only one bordered by very high hills, which in this case range from 1,000 to nearly 2,000 feet above sea level. In the interior, the mountains are higher and more rugged and form broad, flat-topped ridges which are often separated by wide valleys, now occupied by lakes. The highest elevations attained during the present season were nearly 4,000 feet, found on the mountains and ridges farthest to the north and west.

The mountains have characteristically flat, or rounded summits, partly due to glacial erosion. Glacial erosion cannot, however, explain the gently rolling, wide, tableland-like summits, which in the majority of cases are so broad and flat as to be marshy, small swampy ponds or lakes often occuring near the very tops of the mountains. The summits have a gradual and fairly even and uniform slope from a few hundred feet above sea level in the south-east, to nearly 4,000 feet in the north-west. The mountains seldom occur in distinct ranges consistent with the structure of their component rocks. These facts indicate that this section of the south-eastern part of Vancouver island has been once nearly levelled: that is, peneplained by erosion, and that the region has been subsequently elevated and partially dissected.

The rivers and lakes in general follow north-south and north-west, south-east valleys. The former are the larger in this region, being those occupied by the Saanich inlet, Sooke river and Sooke lake, Shawnigan lake and the lower part of the Koksilah river. The latter system corresponds more or less closely to the underlying structure of the rock formations, which strike in the main from N. 50° W. to N. 70° W. Some of these valleys have been filled with drift; the Langford and Colwood plains are good examples. Others are occupied by streams and lakes generally small, but including the upper part of the Goldstream river, the Leach river, the upper Koksilah, the Cowichan and Chemainus rivers and Cowichan lake.

The glacial and more recent periods have greatly affected the present topography. Most of the rounding of the higher peaks is directly traceable to ice erosion, as striæ of large size, and glacial polishing and grooving, are often observed. No evidence is seen in this part of the island of the formation of cirques and hanging valleys. In most mountain regions where local glaciers have been developed the tendency of glacial action has been to heighten rather than lessen the ruggedness of the country; here on the other hand, the peaks are rounded; talus slopes—exceptionally well illustrated a few miles north of Victoria, at Mt. Tolmie and Cedar Hill—were formed on the southern slopes of the hills; and much of the country is covered by thick layers of drift, some of it morainal in character, but most of it stratified. In recent time, the country has been submerged, thus giving rise to the fiord, or drowned coast of the present day, although there is evidence of a comparatively slight uplift of a late date.

GENERAL GEOLOGY.

The formations exposed in the southern part of Vancouver island range from the Devonian period or older, to the Pleistocene and recent. A provisional field classification has been made into the following:—

Unconsolidated superficial deposits	Pleistocene and recent.
South coast deposits	Tertiary.
Coal Measures	Cretaceous.
Younger metamorphics, Mt. Sicker series	Mesozoic.
Older metamorphics, Victoria series	Devonian.

The Tertiary sediments of the south coast are the youngest consolidated rocks. Rocks which when unaltered resemble the Coal Measures, have, along certain belts, been metamorphosed. Metamorphic rocks underlie the greater part of the region.

The older metamorphic rocks cannot be definitely assigned to any one period. A careful search for fossils was made in the calcareous rocks, now completely crystallized; but without success until the writer's attention was called to the occurrence of fossil corals on the south shore of Cowichan lake, about 9 miles from the east end. The locality was visited and identifiable corals, brachiopods, pelecypods and gasteropods were collected. Although the material has not yet been worked up, the fauna undoubtedly belongs to the Devonian period. These fossils fix a series of limestones and calcareous slates in the neighbourhood of Cowichan lake, as definitely Devonian. The series is very similar in character to the old metamorphics near the east coast. Definite correlation, however, will take further work, as the greater part of the territory between the formations is covered by drift, and it was impossible to get their exact relation in the hurried work of the past season. The formations are lithologically similar, although no volcanic members were noted at Cowichan lake. It is very probable that the rocks in the neighbourhood of Victoria and north are of the same general age as those at Cowichan lake, that is Devonian; with some that are possibly younger or older.

Provisionally, therefore, one can place the great series of old metamorphics in the south-eastern part of Vancouver island as late Middle Palæozoic. Dawson and other earlier writers, classify the old crystallines which underlie the Coal Measures as the Vancouver series, and place them in the Triassic period with possibly some Carboniferous members. As the evidence for assigning part of this great series of rocks—especially those in the northern part of the island—to the Triassic, is indisputable; and as Dawson suggests [1] that, should this series eventually prove separable into other formations besides the Triassic, the name Vancouver series be retained for the Triassic members, it seems best to restrict the term Vancouver series to Triassic

[1] Report on a Geological Examination of the Northern Part of Vancouver Island and Adjacent Coasts, Ann. Rep. Geo. Sur. of Can., 1886; p. 10 B.'

rocks of the northern part of the island, and to introduce a new term for the older rocks. Hence, I suggest the term Victoria series,[1] as a general name embracing the older metamorphics of the southern part of the island, belonging to the Palæozoic era. Dawson has already used the name in a limited sense; but it seems best to enlarge its meaning.

The Victoria series consists of a great group of rocks comprising not only sedimentaries, but large masses of intrusive and effusive volcanics, mainly of a basic nature. The sedimentaries are principally of deep water origin, calcareous and fine grained. Some non-calcareous argillaceous members, and even quartzites are, however, present. They have all been very much altered and recrystallized, resulting in massive marbles, and crystalline 'cement rocks,' calcareous slates, ordinary slates and phyllites, slaty quartzites and graywackes, and quartzites; with some hornfels amphibole schists and gneisses which are of sedimentary origin. The volcanic members are both intrusive and extrusive, largely the latter. They are mainly massive flows, porphyritic and amygdaloidal, but tuffs, breccias and agglomerates are present. Some of the agglomerates may represent old vents. The original lavas were mainly basic augite andesites and basalts, but are now altered to the characteristic greenstones. Associated and at times seemingly interbanded with both the sedimentaries and volcanics are dioritic rocks such as those in the immediate vicinity of Victoria, whose origin is very obscure. Some of them are doubtless old intrusives; but in part they appear to be the product of extreme metamorphism of beds of impure argillaceous limestone.

These formations have a general strike of N. 70° to 50° W., with steep dips both to the south and north. The series is very thick, but at the present time an estimate of the total thickness is little better than a guess, as the problem requires further detailed work, both in the field and office. The rocks are tightly folded, and also faulted, and are, therefore, repeated many times. It is probable that the lowest beds are exposed in the most southerly portion of the island, and as one goes north across the strike higher and higher beds are exposed.

Roughly, the distribution is as follows:—

The southernmost beds are massive greenstones, which form a belt 5 to 7 miles wide, extending from Cape Church north-east to Albert head, and from Potter point north-east, nearly to Leach river. To the north of this belt of greenstone, there is in the western part of the area, and extending eastward beyond the lower northward flowing portion of the Goldstream river, a belt of slates, argillaceous schists and quartz schists from 2 to 3 miles in width. Still farther to the north, and apparently forming a continuous conformable series, is a great succession of calcareous beds, limestones, argillaceous limestones, now metamorphosed to amphibole schists and gneisses, and some argillites and quartzose rocks, with intercalcated volcanics. This series is 7 or 8 miles wide, and extends to the north of Shawnigan lake. In the eastern part of the region, near the coast, the greenstones are bounded on the north by a deep, wide, drift-filled valley, extending from Langford to the Royal Roads. All the evidence obtainable goes to show that this valley is underlain by limestone; but there may also be present representatives of the argillaceous sediments. Directly to the north of this valley is the great series of calcareous and argillaceous rocks, met with in the west, north of the schist belt, and which extends from Esquimalt and Victoria northward some 10 miles. The absence in the east of the greater part of the argillaceous series, so pronounced along the Leach river, seems to be best explained by faulting.

Intrusive into this Victoria series are plutonic rocks, ranging from a hornblende gabbro, or gabbro diorite to a granodiorite, and even a granite. There are several of these intrusive bodies. The East Sooke peninsula is underlain almost entirely by hornblende bearing plutonics, principally of the composition of a gabbro-diorite, but

[1] Geological Survey Report, (76-77), p. 101.

with some amphibolites and intrusive apophyses and dikes of a feldspathic rock, syenitic in nature. These plutonics are intrusive into the greenstones to the north and east. Similar areas, but smaller, occur in the Esquimalt peninsula and Victoria West, and still smaller, cross-cutting bodies, seemingly related to these rocks, occur to the west of Cedar Hill and near Elk lake. In the northern part of the Saanich peninsula, south of the Cretaceous sediments, is a considerable area of granodiorite and granite, which rocks cut the old metamorphic series. Similar granodiorites occur to the westward on the opposite shore of the Saanich inlet, south of the Coal Measures which occupy Cowichan bay. Another small area is also found at the northern end of Sooke lake.

In the Sooke peninsula the diorites are cut by trap dikes, some of them being clearly diabase. The Saanich granodiorite is also cut by a system of dikes which appear to be andesitic in nature.

To the north-west of the Victoria series, and unconformable upon them, is another system of sediments with andesitic volcanic members. As far as known these rocks contain no distinctly calcareous members, and consist not only of shales, slates and sandstones, but of conglomerates as well. Their principal occurrence is north of the Cowichan river, where they form a belt some 8 to 10 miles wide, with a strike of about N. 60° W. The actual thickness is probably not more than 15,000 feet, but is repeated by folding or faulting. There are also one or two down warped areas, or down faulted blocks of the same formation along the Koksilah river. To judge from the report of the prospectors and others, this formation appears to form a continuous belt extending to Alberni. The beds are well exposed along the Chemainus river north and west of Mt. Sicker. Since at Mt. Sicker the formation is best known, as it is the country rock of the copper ores found there, it will be called, provisionally, the Mt. Sicker series.

In places this formation has comparatively low dips, is free from intrusive and extrusive igneous rocks, and is not metamorphosed. Thick beds of conglomerate with sandstone and carbonaceous shale occur, which closely resemble the coal-bearing Cretaceous rocks. These unmetamorphosed rocks, if traced across their strike, grade into conformable, tightly folded, highly inclined, metamorphic rocks, slates, graywackes, quartzites, crystalline conglomerates, graphitic and quartz schists. Associated with these metamorphosed sedimentaries are intrusive and probably extrusive basic igneous rocks mainly of an andesitic composition. Where the metamorphism has been excessive, these andesites have become recrystallized, gnessoid, and even schistose, forming amphibole gneisses and chlorite and talc schists. The transition from the unaltered sediments to the crystalline ones, which in some cases are stratigraphically the same beds, is particularly striking along the Chemainus river, where to the southwest of Mt. Sicker the rocks are unaltered conglomerates, sandstones, and carbonaceous shales, which grade gradually into the rocks directly at the base of Mt. Sicker, where they are mainly gneisses and schists.

The definite determination of the age of the Mt. Sicker series is at present impossible, as no fossils have been found in them, and their structural and lithological correlation will require further work. That they are separated from the Victoria series by a profound unconformity is unquestionable. Structurally, they appear to underlie the Cretaceous Coal Measures. However, the formation has been disarranged by great overthrust faults which have in places brought older beds over younger, and this disarrangement may have also affected the Coal Measures. The contact between the Mt. Sicker series and the undoubted Coal Measures is not well exposed; that this contact is unconformable is suggested, but not proved by the exposures examined during the past summer. This point can easily be satisfactorily worked out by further field work. On the other hand, the striking lithological similarity of the unmetamorphosed sediments with those of the Coal Measures indicates most strongly that the Mt. Sicker series is related to the coal-bearing Cretaceous rocks, and may be of nearly the same horizon. From the occurrence of lower Mesozoic formations on the island, and

the suggested unconformity between the Mt. Sicker series and the Coal Measures, it may be argued, however, that the doubtful strata most probably belong to the Triassic or Jurassic periods.

Sediments belonging to the Coal Measures, principally sandstones and conglomerates, with carbonaceous sandy shales, were encountered where Richardson maps them, at the extreme northern end of the Saanich peninsula, and at Cowichan. The southern end of the Nanaimo area was seen in the neighbourhood of Ladysmith, and at the coal mines at Extension. The areas underlain by this formation are more extensive than Richardson maps them, and the thickness somewhat greater. If, as he declares, all the rocks of the Cowichan area belong to the Productive Measures,[1] they are in this region about 1,800 feet thick. Few fossils were found in this series, but from the evidence collected by Richardson and others, they clearly belong to the Cretaceous period.

Along the south-western coast, from Beecher bay westward, occur several small basins or down faulted areas of consolidated, but rather soft, sandstones and conglomerates, associated with relatively thin beds of shale and marl. These have been mapped by Richardson as Tertiary, and there is abundant fossil evidence to warrant the determination.[2] These sediments are shown, not only by their enclosed fauna, but by their character, to be undoubtedly marine. They are separated from the underlying greenstones and plutonic diorites by a marked unconformity and a thick basal conglomerate. This conglomerate rests on an old eroded surface of the crystalline rocks which formed the coast of the Tertiary sea. The irregular surface, the immense, wave-polished boulders, and the characteristic wave-worn dike, and joint-chasms filled with sand and coarse gravel of the sea coast of to-day, are strikingly parallel in the unconformity and basal conglomerate. The beds have only been gently folded, but have been faulted very considerably. The exact estimate of their thickness cannot be made until the throw of the faults has been calculated, but the total thickness exposed is probably not more than 300 or 400 feet.

The heavy covering of drift has already been spoken of. Some of this material is certainly morainal, although much of it can be considered as part of the outwash apron of the immense continental glacier which overrode the island. Some of the stratified drift, as shown by its fauna, is marine. Notable examples of the marine deposits are found in the unconsolidated sands, clays and gravels overlying the low, flat Tertiary basins of the south-west coast. Fluviatile, lacustrine and bog deposits likewise occur. One of the most interesting of these is the old valley which extends from Langford lake to the Royal Roads. This valley is now completely filled with river drift, so that there has developed a flat, broad plain, with well marked, longitudinal terraces.

ECONOMIC GEOLOGY.

The mineral wealth of the district is of considerable importance, but with the exception of copper, it is very doubtful if any of the other metals of commerce have been produced economically. Placer gold has been obtained, and placer mining is still carried on in a very small way. Coal is an important industry on the east coast. Lime and cement are manufactured, clay and sand are used for brick, and, with increasing demand, and greater facilities of production and transportation, other non-metallic deposits will doubtless be mined and industries established.

The principal copper deposits occur at East Sooke, Mt. Malahat, Koksilah ridge and at Mt. Sicker. Other claims of less importance are scattered over the entire area, notably in the Highland and Goldstream districts, and in the neighbourhood of Leach river. There are three main types, which are illustrated by the occurrences at Sooke, Mt. Malahat and Mt. Sicker.

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1 Report of Progress, 1876-77, Geol. Survey, Can., p. 187.
2 J. C. Merriman, Bull. U. of Cal., Vol. 2, No. 3, pp. 101-108, 1896.

The principal deposits at Sooke are in the diorite or gabbro diorite of that area. Intrusive into this formation are dikes and apophyses of more acid plutonic rocks, dioritic and syenitic in nature, and also dikes of diabase. These intrusions seem to have had little or no effect on the formation of the ore. The diorite has been rendered gneissic, and is broken by prominent shear zones, along which, shown by the slickensides, considerable movement has taken place. The diorite is very generally, though sparsely impregnated with pyrite and chalcopyrite. In the shear zones the sulphurets have been concentrated and sometimes form low-grade ore bodies of quite large size.

These shear zones are very numerous. The majority are small and low in sulphides. Some of them are, however, large and quite extensive, and the development of the chalcopyrite more pronounced. The zone in which the Margaret, Copper King and Eureka claims (not registered) are located, is some 200 feet wide, and traceable for at least 4,500 feet and probably for a greater distance. There are two main sets of shear zones in the Sooke district, one set striking about N. 45° E., and the other a little to the west of north. The sheared diorite has, however, been broken and slickensided in all directions. Tiny quartz stringers and a large amount of secondary hornblende have been developed in it. The secondary development of the hornblende has sometimes taken place to such an extent that, very little of the original feldspar remains and the rock resembles an amphibolite. Veins of coarse bladed hornblende often seam the diorite in many directions. There is no field evidence that these veins are representatives of a basic intrusive, but it all goes to prove that the component materials have been derived from the diorite. Along the shear zones waters have easily penetrated, removed the feldspar, recrystallized the hornblende and deposited the sulphides of iron and copper. As a rule the sulphides are disseminated through the shear zone in small patches, but occasionally they occur in small veins and lenses, due to a complete replacement of the country rock. In the shafts on the Willow Grouse and Blue Bird claims, chalcopyrite and pyrite occur with but little of the silicate gangue. This more complete replacement is probably to be accounted for by the fact that it occurs near the junction of two shear zones. Native copper frequently occurs in the outcrop of these deposits, but only near the surface, and is due to surface alteration of the chalcopyrite. It is improbable that any marked secondary enrichment of these deposits will be found, as the chalcopyrite and pyrite occur unchanged at the surface, except for the most superficial oxidation and alteration. These copper deposits, considering the entire sheared zone, are all essentially low-grade, but are of large size.

Towards the west end of the East Sooke peninsula is a large deposit of almost pure sulphides, with a little magnetite. The sulphides are, however, very low in chalcopyrite, consisting mainly of pyrrhotite and pyrite. The material is too low in copper to be mined profitably, although one or two attempts have been made. It occurs in a more basic rock, a gabbro, which is related to the normal gabbro diorite. The whole deposit may be a basic segregation from the original magma, but it has been secondarily concentrated in a well marked shear zone in the gabbro. Less important deposits of iron and copper sulphides also occur in the shear zones of the greenstones to the east and north.

On Mt. Malahat, to the east of Shawnigan lake, sulphides of copper and iron, with considerable magnetite, are developed in limestones near the contact with dikes and apophyses of granite and granodiorite. In the contact zone of the limestone the usual contact minerals have been developed, garnet, diopside and wollastonite; the diopside altering to serpentine. Replacing the limestones are large irregular bodies of magnetite, pyrite and pyrrhotite, with small percentage of copper. Several attempts have been made to work these bodies, but they are too low in copper to pay the present cost of mining and transportation.

The copper ores on the ridge between the fork of the Koksilah and Cowichan rivers, the King Solomon and Blue Bird group of claims, are developed in the calcareous members of the Victoria series. They are not, however, directly contact

bodies, although they may owe their origin to unexpected or neighbouring intrusive masses. The ore minerals occur in shear zones and veins in the metamorphosed calcareous rocks of the region.

On Mt. Sicker is found the only copper deposit that has been mined profitably, the ore body of the Lenora, Tyee and Richard III mines. At present, however, there is no production from the district. The ore is chalcopyrite, pyrite and sphalerite, with a quartz and barite gangue, and the country rock is the much metamorphosed Mt. Sicker series. The Tyee ore body is a flat lens, and Mr. J. W. Bryant, of the Tyee Company, believes it to have been developed in a syncline of the black, lustrous, partly graphitic schists. Mr. W. H. Weed[1] infers from the occurrence of the barite in the ore, and its absence in the surrounding rocks, that the ore-bearing solutions must have come from a depth. Ores of a similar nature occur elsewhere on Mt. Sicker, to the west on Mt. Benton, and to the east on Mt. Richards. They do not, however, occur in distinct lenses of relatively massive ore, but as disseminations, and partial replacements in the more schistose rocks and shear zones. They are usually in close association with the basic volcanic rocks, which in the neighbourhood of the ore bodies have been sheared and altered to chlorite and talc schists. The ores have doubtless been formed by hot waters, indicated by the alteration of the country rock, while the presence of so large a percentage of barium—as Mr. Weed has shown—strongly supports the view that the waters are of magmatic origin. But it is possible that the concentration of ores into distinct lenses has resulted from the work of relatively shallow, circulating, meteoric waters.

The other copper deposits of the region are of much less importance, but of the same general type as those described above. They are principally disseminations and replacements in the rocks of the Victoria series, along shear zones or fissures easily penetrated by waters. All the ores of the district are low-grade, but some of the ore bodies are large, hence by mining on a large scale, and by concentration at the mine, it seems probable that some of them may be profitably worked.

The discovery of placer gold has caused much excitement and prospecting in the district. From Leach river and vicinity considerable placer gold has been obtained, most of it in the late sixties. Of late there have been unsuccessful attempts to continue placer mining in the river and in the north fork. One or two Chinamen have been working up Leach river for some time; but it is believed have hardly made living wages. The writer is of Dawson's opinion that the gold in Leach river and North Fork has been derived from small quartz stringers in the slaty rocks of the district.

The quartz stringers and veins are very abundant, and although usually small, sometimes attain a considerable size, four to six feet in width and traceable for several hundred feet. In spite of the fact that they seem to have been the source of the gold found in the streams, they are too low grade to be worked profitably. Every attempt, and the attempts have been many, to obtain gold from the quartz veins of the vicinity has been a failure. The veins are doubtless similar in character to the quartz veins which are so numerous in any strongly metamorphorsed region, and which commonly are practically barren. It has taken a long period of erosion and the disintegration of many hundreds of these veins through a very considerable thickness, to produce the small amount of gold which has been found in the rivers. At present it appears that even Leach river has been, from an economic standpoint, worked out, and that the other streams are unlikely sources of much placer gold.

The non-metallic mineral products of the district are of far greater value. The excellent coals of the east coast are well known, and form the basis of a large well established industry. The above-mentioned coal basins were merely visited. Some prospecting has been carried on in the Cowichan basin, and at the present time a diamond drill is in operation prospecting the measures at the northern end of the Saanich peninsula. The Coal Measures of this basin are much thicker, probably 1,800 feet; and

[1] Notes of the Tyee Copper Mine, Eng. and Min. Journal, Jan. 25, 1908; pp. 199-201.

also more extensive than Richardson reports. As far as the surface exposures may be relied upon, the amount of coal present is small. The few seams found are thin and generally sandy. They occur near the base of the formation. There is a large area in the Cowichan valley underlain by the Coal Measures, in which there are practically no exposures, so that one cannot judge as to the probable presence or absence of workable coal; nevertheless, one is tempted to inquire if it would not be advisable to prospect this basin more thoroughly than has been done.

Prospecting has also been carried on in the small basins of Tertiary sediments of the south-west coast, at Sooke and Coal creek. Although there are a few small, thin lenses of lignite and lignitic sandstones present, there is nothing else to encourage the prospecting of these beds. The beds are clearly of marine origin; shown not only by their lithological character, but by their fauna, so that the occurrence of extensive coal seams in them is most improbable. Elongated cylindrical masses of lignite are found in the sandstones and are doubtless old logs which have been washed into the Tertiary seas and have become lignitized. The rest of the carbonaceous matter in the sediments is probably of the same drift origin. The little coal that has been found is all lignite, and there is little or no hope that any semi-bituminous or bituminous coal occurs in these basins. The individual basins are not only small in extent, but have been extensively broken and faulted, and these faults would very seriously interfere with any mining that might be attempted. One feels very confident therefore, in discouraging any attempts at mining or even prospecting for coal in these basins of Tertiary sediments.

Of very considerable importance is the lime and cement industry. On Tod creek, a small branch of the Saanich inlet, the Vancouver Portland Cement Company's plant is located. They are procuring their cement rock, which requires little or no admixture of clay, from a thick band of a crystalline argillaceous limestone, one of the members of the Victoria series. Formerly, a little drift clay was mixed with the limestone, in order to bring up the alumina and silica content; but at present this is found unnecessary.

Lime is manufactured from the purer limestone or marbles of the Victoria series. The plants are located on the west side of Esquimalt harbour, on the west coast of Saanich inlet, and to the north-west of the head of Esquimalt harbour near Parsons bridge. At the latter plant the lime is used by the Silica Lime Brick Company to make sand-lime brick. The sand is obtained from a pit near the plant, in stratified sands and gravels of fluviatile origin. Lime has also been burned inland, in the Highland district, along the mill stream road, but at present the high transportation charges make the industry unprofitable. Other localities of good limestone, suitable for the production of lime, are numerous, and although other occurrences of natural Portland cement rock are not necessarily to be expected, the materials for the manufacture of Portland cement are convenient to any of the purer limestones of the Victoria series.

At present, with the exception of ordinary brick manufacture, the clay industry is confined to a small pottery plant in Victoria. Part of the clay is procured from the shales of the Coal Measures at Extension. Many of these are reported to be of good quality, some of them fire-clays. Other high grade clays are absent. None of the argillaceous members of the Victoria series, on account of their metamorphic character, are to be considered. The shales of the Mt. Sicker series, the Cowichan Coal Measures and of the Tertiary basins are not abundant, and are generally impure. The clays of the surficial deposits are also impure, and unsatisfactory for higher grade wares than common brick.

OSOYOOS AND SIMILKAMEEN MINING DIVISIONS.

(Charles Camsell.)

The geological work of the season 1908 was again carried out largely in camp Hedley, in continuation of the work of 1907. On the retirement of the party from the field in 1907, about one-third of the topographical work yet remained uncompleted; while the whole of the mapping of geological formations was left over until the season just ended. All this work was finished before the close of this season. In the geological investigations the writer was again assisted by Mr. J. A. Allan; while Mr. L. Reinecke had charge of the topographic work.

On the completion of the Hedley sheet, Mr. Reinecke moved his party up to Otter flat on the Tulameen river, where work was commenced on a new topographic sheet. It is intended that this sheet shall cover an area of about 200 square miles; forming a rectangle with sides about 12 miles in an east and west direction, by 17 miles north and south. The sheet will cover many important economic deposits. Gold and copper ores are being developed in the north-west portion; a coal field lies in the south-east; magnetite, chromite and molybdenite are known to occur in the south and west; while gold and platinum placers are being worked in the bed of the Tulameen river and several of its tributaries.

The photographic method was employed in the field work of this sheet, and it is hoped that sufficient data have been obtained to allow of the compiling and publication of the map by the spring of 1909.

MINING DEVELOPMENTS.

In the Hedley camp and adjoining district, except by two or three companies, little additional development work has been undertaken or carried out during the past year. Nearly all the mineral claims in the camp have been Crown granted and the British Columbia mining law does not compel owners of these to do more than pay the annual taxes; consequently, much promising prospecting ground is tied up, with nothing being done to demonstrate for prospective investors its potential wealth.

Daly Reduction Company.

The Daly Reduction Company had a most successful year, the weather being so favourable during the winter that the whole plant was in operation almost continuously throughout the year. The lack of water for power, and the freezing up of the flume during some of the winter months, had in former years necessitated the closing down of the mill and the suspension of most of the mining operations, but the weather was so mild during the last winter that no difficulty was experienced in keeping the flume free from ice. Moreover, under the present management the efficiency of the stamp mill and cyanide plant has been greatly increased, and the daily average tonnage of ore treated brought up to about 130 to 135 tons.

At the mine itself, where a year ago ore was being stoped only from the Nickel Plate, and Sunnyside No. 2, large ore bodies lying between these two places have since been exposed and are being worked at Sunnyside No. 3 and Sunnyside No. 4. The former of these two is worked by an incline shaft, which is down about 175 feet. The latter is at present being worked as a large glory hole, but the intention is to drive a tunnel along the strike of the ore body and stope out from either side. Some exploration has been done by means of the diamond drill and by open-cuts on other properties of this Company.

Adjoining Districts.

In the adjoining Hedley districts the most important sections in which development has been going on are, the Henry Creek claims, situated on the south side of the Similkameen river two miles above Hedley and the Golden Zone group, lying to the north, about 11 miles by wagon road.

Henry Creek District..

In the Henry Creek district some local excitement was caused during the last winter and spring, owing to the finding of free gold in a vein on one of the claims belonging to the Pollock Mines Company.

This Company owns five Crown granted mineral claims, on which a great deal of prospecting has been done by tunnels, shafts and open-cuts.

GEOLOGY OF THE HENRY CREEK DISTRICT.

The country rocks of these claims are interbedded limestones, argillites, and black, volcanic tuffs, belonging probably to a higher horizon than the limestones and quartzities of Hedley. A stock of monzonite resembling the darker variety of the Hedley monzonite cuts these sediments and occasionally sends off tongues into the sediments. The sediments stand in an almost vertical attitude and strike north and south. Fissures have been developed in these in a north and south direction, and in many cases dikes of andesitic and lamprophyric character occupy these fissures. The lower workings are on a strong and well defined fissure, which has been explored for nearly 400 feet. This fissure varies in width from a few inches up to ten or twelve feet, and is filled with crushed and broken rock, traversed by small quartz veins which cement the broken fragments. Mispickel occurs abundantly in the main fissure, besides appearing in considerable amount in the numerous small parting planes which traverse the sedimentary rocks in the neighbourhood of the monzonite.

The upper workings of these claims are on a well defined quartz lead, which cuts both the sediments and the monzonite. The quartz is well mineralized with mispickel, pyrite and galena, and is said to carry good values in gold in the sedimentary rocks. In the monzonite the values are not sufficiently high to induce prospecting.

Many claims have recently been taken up in this neighbourhood, and on some of those lying to the east of the Pollock mines there are indications that values in silver may be obtained.

Golden Zone Group.

Another important group of claims on which a small 5-stamp mill has recently been erected and considerable development work done, is the Golden Zone group lying on the headwaters of one of the branches of Twenty-mile creek, about 11 miles from Hedley. This group consists of four claims lying at an elevation of about 5,900 feet above sea level. They were first located in 1900 by the present owners, who had been doing development work on them annually until a year ago when a 5-stamp mill was brought in and erected on the ground. Actual milling of ore began about the beginning of August, but owing to a lack of water there were numerous interruptions, and about three weeks later the plant had to close down.

The geological conditions on this group are as follows:—

A belt of sedimentary rocks consisting of limestones, quartzites and some tuffs covers the northern portion of the claims running from east to west across all of them. On the two western claims these sediments are cut by a very fine grained micaceous granite, and to the south this fine grained variety is cut by a large batholithic mass of coarse reddish granite.

Later in age than all of the above-mentioned rocks, an intrusion of granite porphyry of dike like proportions has been injected between the sediments and the coarse grained granite, exhibiting well marked contacts with each of these rocks.

The four mineral claims have been staked on a well defined and persistent quartz vein which can be traced by its outcrop for about 1,000 feet in an east and west direction. This vein cuts both the fine grained granite and the sediments. In the granite it occupies a strong fissure varying in width from two to four feet, but on passing into the sediments, it appears to split up into four or five smaller veins which become lost under the drift and may possibly pinch out altogether.

It is a true fissure vein, and, in the granite—when not much oxidized and well exposed—shows a well marked banded structure due probably to the filling of an open space. In the sediments, and in the contact zone where oxidation goes deeper, the true nature of the vein is not so apparent. The gangue is a hard, white quartz and the ore minerals found in it are pryite, arsenopyrite, zinc blende and chalcopyrite. Besides the secondary minerals due to oxidation and surface alteration, a later fracturing of the vein has taken place and these fractures filled with secondary sulphides. The walls of the vein are clean and often show slickensided faces.

The values are in gold and are said to be lower in the granite than in either the contact zone or the sediments. On panning some of the oxidized ore of the surface, a number of very fine colours of gold are obtained among the arsenopyrite concentrates in the bottom of the pan.

The value of the property will depend to a large extent on the size and persistence of the veins where they lie in the sediments, but sufficient work has not yet been done to demonstrate either of these factors.

Princeton District.

In the Princeton district, little in the way of mining development has been going on. The coal mines have not been operated since the summer of 1907 and there is little evidence that anything will be done until the Great Northern railway reaches that point.

On Copper mountain, like camp Hedley, most of the mineral claims have been Crown granted, so that no assessment work is necessary for the owners to hold them. The Reco mineral claim, however, has been steadily worked for a year and a half by a crew of four men; and on the other side of the river at Friday creek, the Gladstone claim was further prospected by the owners during the summer.

Some claims on Fivemile creek and at Roche river were considered by the owners sufficiently promising to warrant the expenditure of a considerable amount of money in development.

Tulameen District.

In the Tulameen district, where the new sheet is being mapped, much more development work has been going on than in other sections. The Granby Company of Phœnix have had a gang of from eight to twelve men working continuously for the last two years in prospecting the Independence group of claims at the head of Bear creek. Over 1,000 feet of tunnelling and 180 feet of shaft and winze have been done besides a large amount of surface prospecting. A large shoot of good copper ore has been defined by these workings. This shoot has been followed in a north and south direction for about 350 feet, and downward for a depth of 180 feet. At a level of 126 feet below the surface, cross-cuts show the ore body at its northern end to be about 90 feet in width, and the tunnels from this end running in a southerly direction along the east and west wall, show these walls to be gradually diverging from each other, increasing the probable width of the ore body. The eastern wall, along which the tunnel has been driven for 300 feet, is a well defined plane of fracture which shows a selvage of clay and talc. There has been some movement along this plane, as shown by the slickensided faces. The western wall is not so well defined, the ore apparently fading away into low grade rock.

The ore body, which is in a granite porphyry, appears to be cut by a darker syenitic variety that is also highly mineralized with copper ores. The whole is much fractured and cut by small calcite veinlets, which carry the ore minerals. Where the fracturing is greatest, the rock is richest in sulphides. The whole ore body is very porous with geodes of calcite and many cavities. All the workings are very wet. Much alteration is going on even at the present time; the feldspar is being altered to kaolin; calcite is being deposited and the chalcopyrite is being changed to higher grade ores, such as bornite, chalcocite and cuprite. The water itself contains a large percentage of copper and where it flows down the shaft or over the walls of the tunnel the red oxide of copper is deposited.

On this group operations have been suspended until a wagon road from Otter flat can be built and mining machinery imported.

A new discovery of Tertiary coal, of a fairly high grade, was made a couple of years ago on the north fork of Granite creek. An English company obtained a bond on a group of these claims and spent several thousand dollars in the work of driving tunnels and making cross-cuts to expose the different beds. Owing to inability to secure an extension of time on their bond from the owners, with a view of making thorough coking tests, operations were suspended last spring and nothing further has been done. The work of this company, however, was sufficient to show the great economic importance of this coal field, which though somewhat smaller in extent than the Princeton coal field, contains a coal which will be in great demand for steam purposes, as soon as a railway reaches the Tulameen. The work done also demonstrated the identity of the Collins Gulch coal, which has been known for years, with that of Granite creek. But while the outcropping edges of the basin on the Collins Gulch side have undergone a good deal of disturbance, the seams on the Granite Creek edge have only been slightly tilted and lie in such a position that they can easily be mined. The area of the whole basin does not cover more than about 8 square miles; but three different coal-bearing horizons have been defined, and each of these is likely to contain from one to three workable seams. This coal formation is probably of the same age as that of the Princeton basin, which has been defined as Oligocene. The two are separated from each other by a broad belt of volcanic rock. The Coal Measures are seen to be resting on a flow of earlier volcanic rocks, while a younger series of volcanic rocks overlies and covers a part of them on the western part of the basin.

The geological relations of these rocks will be worked out next summer.

Other portions of the Tulameen district in which operations have been carried on, are at Laws camp, on Bear creek, at Boulder creek, and on Champion and Eagle creeks. At Laws camp where work has been continuously in progress for the last three years on some very promising gold properties, briefly described in the Summary Report for 1906, operations were discontinued last spring on account of the difficulty of getting in supplies through the destruction of a part of the wagon road leading up to the camp.

Placer mining of the gold and platinum bearing gravels of the Tulameen river and Granite creek has been carried on in an intermittent manner by some white men and a few Chinese, and a small quantity of these two metals has been recovered. The most important work of this nature is that being done by Mr. Lambert, on the main branch of Granite creek, just above the North Fork. The preliminary work of building a dam and 600 foot flume has been completed, so that the actual work of sluicing the gravels should be commenced next summer, and good results ought to be obtained. Leases have also been taken up by Messrs. Law and Godfrey on the benches of the Tulameen river above Otter flat, with a view to working some of those higher benches on a more extensive scale than has hitherto been attempted.

With the advent of a railway these and many other mining enterprises in this district promise to develop into importance.

PHŒNIX CAMP AND SLOCAN DISTRICT.

(O. E. LeRoy.)

INTRODUCTION.

The season of 1908, from May until the end of September, was occupied in making a detailed geological survey of the Phœnix camp. In this work the writer was most ably assisted by Mr. C. W. Drysdale.

The area examined was 2 square miles in extent and embraced the whole of the mineral zone on which the mines are situated. A special report and map will be published as soon as possible. The latter will be issued on a scale of 400 feet to one inch; a scale sufficient to show all the geological features, which are in the main rather broadly developed.

The courtesy of the three operating companies permitted free access to all underground workings and allowed an examination to be made of the logs of all the diamond drill holes, the total length of which amounts to about 7 miles. The data thus acquired and correlated with the surface geology give, within certain limits, very accurate information regarding the geological structure of the camp.

GENERAL GEOLOGY.

With reference to the general geology, no additional information was derived regarding the age of the older rock formations and they can only be referred to the Palæozoic, as outlined on the geological map of the Boundary district. The granodiorite of Jurassic or Post-Jurassic age, is represented by a few poorly defined dikes cutting the Palæozoic, while the Tertiary is made up of both sedimentary and igneous rocks.

The Palæozoic admits of a three-fold division. The lower consists principally of massive, gray quartzites and basic porphyrites, altered in places to quartz and hornblende schists respectively. The porphyrites are intrusive in the quartzites, in the form of dikes and sills, and are not found cutting any of the younger rocks. Crushed argillites and altered limestones occur as small isolated masses with the schistose varieties of the above rocks.

The middle division is composed of quartz breccias and conglomerates derived from the lower series, siliceous, chloritic and feldspathic tuffs and crystalline limestones. In places, the conglomerates show an assortment of material into finer and coarser beds of rounded pebbles. It is generally massive, however, and passes insensibly into the breccia with no hard and fast line separating them. The tuffs are both banded and massive, and stratigraphically cannot be separated from the breccia, with which they are always associated. The limestones occur in irregular and lenticular areas and are erosion remnants of a once extensive formation which suffered from folding along with the breccias and tuffs.

These two divisions form a basin or trough, with the lower outcropping at intervals along the border. The mineral zone occupies the upper part of the middle division.

The upper division is unconformable to the quartzite breccia, and consists of black carbonaceous argillites, which have but a limited exposure on the east border of the map sheet.

The sedimentary portion of the Tertiary consists of conglomerates, grits and tuffs of a prevailing white or light gray colour when weathered. They are unconformable

to the Palæozoic, and form a long irregular band extending from the War Eagle to the Gilt Edge claim, crossing the east side of the town of Phœnix. The present attitude of the beds varies from almost horizontal in the south to steeply inclined and vertical in the north portion of the exposure. The character of the stratification shows that the deposition occurred in quiet waters, and the beds evidently represent a small portion of the floor of a Tertiary lake.

This period of sedimentation and erosion was followed by one of wide spread volcanic activity, during which a great part of the Boundary district was covered by great lava flows, which filled up the valleys and covered some of the highest ridges.

Subsequent erosion, with the complete removal of large areas of the lava, shows that the topography prior to the eruption of this extrusive was very similar to that of the present.

One isolated remnant occurs in this area, and parallels the stratified rocks along their eastern border. The lava in general is andesitic in character, but more acid and basic varieties also occur with vesicular and amygdaloidal types.

Later intrusions of basic alkali rocks and pulaskites, as dikes and stocks, have cut all the older rocks; and with these, the period of igneous activity in this area closes. Both intrusives are genetically connected, and are probably closely related to the lava flow.

ECONOMIC GEOLOGY.

As previously stated, the mineral zone belongs to the intermediate division of the Palæozoic. The principal portion of this zone outcrops in the form of a large L, and extends from the Gilt Edge and Montezuma claims, south to the Gray Eagle and War Eagle, then eastwards through the Monarch and Rawhide and northwards through the Curlew and Gold Drop into the Snowshoe. A subordinate zone lies to the west on the Idaho and Brooklyn claims. It was originally connected to the main zone and its present isolation is due to subsequent erosion.

The exposed area is about 120 acres in extent, but the actual area is much greater as a considerable portion is overlain by the sedimentary and extrusive rocks of Tertiary age.

The field evidence goes to show that the mineral zone represents a metasomatic replacement of part of the limestones and tuffs by epidote, garnet, chlorite, hornblende, calcite and quartz, together with chalcopyrite, hematite, pyrite and magnetite. Throughout this zone, the principal lines of fracture as shown in the underground workings of the several mines have approximately a north and south trend. Between these the ground is intersected by a host of minor fractures. The former represent the trunk channels, and the latter the distributaries; the whole forming a complete system of underground circulation for mineral solutions, by the action of which the country rocks have been replaced by the above gangues and ores. The concentration of the chalcopyrite along certain lines has formed ore bodies of enormous size, lying at various attitudes in the mineral zone and bounded by walls which in the main are commercial rather than structural.

In the commercial success of operation, the low-grade character of the ore is offset by its fluxing qualities, by the size and favourable situation of the deposits, and by the many economies that can be practised in the handling of a large tonnage. The pillar and room method of mining, and the non-necessity for general timbering are the most important features in the general economy.

The values are fairly uniform throughout and approximate very closely the general averages. The Granby Consolidated, during the past financial year ending June 30, produced 858,432 tons; the values being gold, 0·0503 oz.; silver, 0·2865 oz.; and copper, 1·171 per cent per ton. In 1907, the Snowshoe mine yielded 0·059 oz. gold; 0·32 oz. silver, and 1·3 per cent copper per ton, of the 135,000 tons produced. During the past year the Granby Consolidated were working continuously on both sides

of the mineral zone. The premier mine of the district is situated on the west side, with workings extending through the Knob Hill and Ironsides claims, into the Ætna and Victoria. There are three outlets for the ore, namely No. 2 tunnel; No. 3 tunnel; and the Victoria shaft, through which is raised all the ore mined on the 200, 300 and 400 ft. levels. On the west side the workings are on the Gold Drop claim and the Curlew fraction, which lies between the Snowshoe and Rawhide claims. All the ore passes through the Curlew tunnel to the loading bins.

Both the Great Northern and the Canadian Pacific railways have spurs to the mines, and afford ample facilities for the transportation of the ore to the Company's smelter at Grand Forks, some 20 miles distant.

The tonnage mined this year will be the largest in the history of the Company and up to December 20, amounted to 1,006,659 tons.

The Consolidated Mining and Smelting Company of Canada resumed operations in August on the Snowshoe and War Eagle. The former, which is operated under lease from a London company, has, up to December 20, produced 37,989 tons. The ore is shipped partly to the Company's smelter at Trail, and partly to the British Columbia Copper Company's smelter at Greenwood. The main tunnel is the avenue of outlet for the greater part of the ore, which this season has been won chiefly from the big glory hole. A connexion has also been made with the old workings, with a view of more economically handling the ore mined in the reserves on the northern half of the claim.

On the War Eagle claim of the Phœnix Amalgamated group, development work has been carried on and sample shipments of about 400 tons have been sent to Trail. The shaft is down 100 feet, and up to the present about 1,200 feet of drifting have been done. The mine has no railway connexion, and the ore has to be hauled by teams to the nearest point on the Canadian Pacific, which is about three-quarters of a mile distant.

The Dominion Copper Company operated the Brooklyn and Rawhide mines during the summer. The mines, however, were closed down early in September, and so remain pending a reorganization of the Company. The ore mined up to August 8, amounted to 15,220 tons, which was shipped over the Canadian Pacific railway to the Company's smelter at Boundary Falls.

The Stemwinder and Idaho, belonging to the same company, were not operated during last season. The ore body of the latter is continuous with that of the Brooklyn, and the workings of the two mines are connected under the town of Phœnix.

The Rawhide ore body is continuous with that of the Gold Drop, and lies below and to the east of the latter. It has been opened up by a series of glory holes and six tunnels.

SLOCAN DISTRICT.

The month of October was spent in the Ainsworth and Slocan mining divisions of the Slocan district. Brief examinations were made of as many of the working and idle properties as was possible in the limited time. Among those visited were the Whitewater mine, Whitewater Deep, Rambler-Cariboo, Payne, Mercury, Last Chance, Surprise, Noble Five, Reco and Richmond-Eureka. This examination is only preliminary to a detailed survey which will be undertaken next season.

It is proposed to make a topographical and geological map of about 260 square miles in the above divisions. The north and south boundaries of the map will be so situated as to include the claims in the Whitewater basin as well as those in the basin of the south fork of Kaslo creek. The east and west boundaries will be Kootenay and Slocan lakes, respectively. Considerable development work has been done this year on many of the older properties, as well as on several claims which have hitherto

attracted but little attention. An increasing interest in this silver-lead district seems to indicate, if not a general resumption of mining, at least a larger shipping list, and tonnage output in the near future.

The principal shippers up to November 22 of this year were the Whitewater, Richmond-Eureka, Standard, Rambler-Cariboo, Last Chance, Idaho, Ruth, Vancouver, Reco, Slocan Star, Hewitt, Sunset, Slocan Sovereign, Canadian Group, Alpha and Rio, with a total output of about 23,300 tons.

TOPOGRAPHICAL WORK AT ST. BRUNO, QUE., AND PHŒNIX, B.C.

(W. H. Boyd.)

Acting under your instructions to make a topographical map of St. Bruno mountain, Chambly county, Quebec, I left Ottawa for that locality on April 28, accompanied by Messrs. F. H. MacLaren, H. Matheson and W. A. Johnston of this office.

The area covered comprises the main portion of the mountain, and the work occupied about three weeks.

The methods employed were transit and stadia traverses with accompanying sketches. A line of instrumental levels was run from the G.T.R. station, along the road, to the foot of the mountain. The publishing scale is 800 feet to one inch, with 20 foot contour intervals. The map was compiled on my return to Ottawa.

On June 30 I left for Phœnix, B.C., where the summer's work was to make a special detail map of that camp, similar to the one made of the Rossland camp; the scale being 400 feet to one inch, with 20 foot contour intervals. The area of the Phœnix map sheet is about 2 square miles and embraces the working mines and the town of Phœnix. Attached to the party were the following assistants: A. O. Hayes, W. E. Lawson, C. C. Galloway, M. Y. Williams, O. G. Gallaher and J. K. Workman. J. D. Galloway and E. E. Freeland were engaged in the field to complete the number of the party. All assisted in a willing and intelligent manner.

The methods employed were a triangulation control from a measured base on Ironsides avenue, with transit and stadia traverses to fill in all the detail. Sketches on 200 feet to one inch accompanied all traverse notes. The triangulation was computed, and the main traverses reduced in the field office to ensure results of the required accuracy being obtained, and also to eliminate, while still on the ground, any errors that might occur. The compilation of the map was started in the field. On August 20, Mr. A. Dickison, of this office, joined the party to assist with the compilation.

The work in Phœnix came to a close on September 30, after which I accompanied the Director and Mr. O. E. LeRoy into the Slocan country in order to look over, with them, the ground for the following summer's work. After spending a few days there, the Sheep Creek camp was next visited in company with the Director; some information was obtained of this camp to assist in making a sketch map to illustrate the report of the Director on that district. After leaving Sheep creek, a day was spent in visiting the cave at Ainsworth; after which I left for Ottawa.

THE BIG HORN COAL BASIN.

(G. S. Malloch.)

The Big Horn coal basin, situated between the Big Horn range and the first range proper of the Rocky mountains, and extending from the North Saskatchewan to its tributary, the Brazeau, was discovered by Mr. D. B. Dowling, of this 'Survey,' in 1906. Since then it has attracted considerable attention owing to its proximity to the lines of the Canadian Northern and Grand Trunk Pacific railways, for the use of which it offers an abundant supply of coal, much superior as a steam producer to the lignites found directly along their routes. During the past summer a photographic survey was made of this basin, and a contoured geological map will be published as soon as is practicable.

GEOLOGICAL SECTION.

The rocks of the basin are entirely of sedimentary origin, and the thirteen formations found are correlataed on stratigraphic and lithogical grounds with thirteen which have been described from the vicinity of the Bow river. These are as follows, beginning with the lowest:—

Palæozoic.

1. Intermediate beds: consisting of calcareous shales and impure limestones.
2. Lower Banff limestone.
3. Lower Banff shale.
4. Upper Banff limestone.
5. Rocky Mountain quartzite.

Triassic?

6. Upper Banff shale.

Jurassic.

7. Fernie shale.

Cretaceous?

8. Kootanie formation: the coal-bearing formation consisting of a succession of sandstones, and black shales.

Cretaceous.

9. Dakota sandstone: this also includes some shale.
10. Benton shale.
11. Cardium sandstone, and intercalated shales.
12. Claggett shales.
13. Judith River sandstones, and shales.

Of these, the first four were described by Mr. R. G. McConnell (1); the second four by Mr. D. B. Dowling (2); and the last five by Mr. D. D. Cairnes (3).

GENERAL AND GEOLOGICAL DESCRIPTION.

As defined above, the basin is roughly 35 miles in length by 8 in width and extends north-west from the Saskatchewan, in conformity with the general trend of the ranges. On the south-west it is bounded by the first range proper of the Rocky mountains.

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1 Annual Report, Geol. Surv. Can., Vol. II (N.S.), pp. 17-19 D.
2 Report on the Cascade Coal Basin, Alberta, by D. B. Dowling, B.A. Sc., 1907, pp. 8-9.
3 Moose Mountain District of Southern Alberta, by D. D. Cairnes, 1907, pp. 27-32.

This range offers a fine example of the fault block type, which is almost universal east of the continental divide. Enormous pressure from the south-west has tilted a block of strata perhaps 100 miles in length and forced it upward in a north-easterly direction, until Devonian strata at its base have overridden Cretaceous in the basin below. As in the other ranges, erosion has removed the younger formations from the back of this block, so that it is now composed entirely of Carboniferous and Devonian formations. These consist largely of thick-bedded limestones which offer considerable resistance to the further action of erosion. The general character of this range as a fault block is obscured by a number of minor crumplings of the limestone beds, developed by the pressure before it became strong enough to effect the break along the fault line. These crumples have accentuated the diversity in form, which would result naturally from the combined action of glacial plucking and of rock disruption, (due to sudden changes of temperature and to frost), both of which agents are efficient at the high altitude of the range. Consequently, in place of a simple scarped face on the north-east, a succession of cirques eaten back into the range to varying depths, and often exhibiting curved and branching axes, have given rise to protruding shoulders, precipitous cliffs, and extremely narrow ridges of fantastic irregularity. Nevertheless the range is remarkably straight when viewed as a whole.

On the south and north the Big Horn coal basin is bounded respectively by the Saskatchewan and Brazeau rivers, which cross the ranges in deep flat-bottomed valleys. The continuity of the first range is also broken by the valleys of two small streams which unite to form Big Horn creek. This flows east across the basin and at its south-east corner empties into the Saskatchewan. Near the north-west corner, Rocky creek heads in a particularly deep cirque, but fails to pierce the range entirely.

Unlike the first range to the south-west Big Horn range on the north-east of the basin does not extend beyond the Saskatchewan or Brazeau rivers, but is there represented only by a ridge of foothills of no greater elevation than their fellows.

These have been formed by the same pressure which developed the great thrust faults to the west, but which seems farther east to have chiefly affected the weaker strata which overlie the Palæozoic limestones of the mountains. Several exceptions occur, however, where these limestones have been folded and faulted so as to form outlying ranges, but which are much inferior both in length and elevation to the great fault blocks to the west. The Big Horn is the longest of these outliers, and near its centre where its elevation is greatest, it is essentially a fault block similar in all respects to the first range already described. Towards its ends, however, the throw of the fault becomes less and the direction of dip gradually changes to the north-west at that end of the range, and to the south-east at the other, and the Palæozoic limestones pass beneath younger formations. South of the Saskatchewan the range is represented by a sharp anticline in the Kootanie formation, the western limb being apparently slightly faulted over the eastern. To the north the Upper Banff shale forms the top of the ridge from about opposite the Brazeau gap through the first range, and finally north of that river the range is reduced to a simple anticline in the formations above the Kootanie.

The western slope of Big Horn range is comparatively gentle, being slightly lower in angle than the dip of the beds. Glacial erosion has been active here, but the cirques do not end in precipitous cliffs as on the eastern side of the first range, for the ice has acted on the upper and not the lower surface of the strata. The excavation of these cirques has given rise to a number of spurs which are usually flanked to a greater or less extent by the Upper Banff shale.

Cirques have also been developed on the eastern face of the range, and as a rule, the cirques on this side are much deeper than those on the west slope. In three cases they have broken entirely through the limestone strata, and have formed deep hollows in the soft, overlying formations behind, until checked by the hard beds in the Kootanie coal measures. Besides these three cirques, the Big Horn range is broken by three gaps occupied by streams draining the basin to the west. Beginning with the most

southerly, these are known as Grave creek, the South Branch of the Brazeau, and Trail creek. Inside the range all of them break into numerous branches whose positions are largely determined by the outcrops of the weaker formations.

Lying between the Big Horn range and the first range proper of the Rocky mountains on the west, the basin has a general elevation some 2,000 feet lower than that of the bordering ranges. This depression is partly due to the weaker resistance which the formations above the limestone offer to erosion and partly to the synclinal structure of the basin. The dip of the beds comprising the Big Horn range is sometimes as high as sixty degrees, but in accord with the synclinal structure, this decreases to the west until the axis of the syncline is reached. The western arm of the syncline is broken by the fault at the foot of the first range and more or less overridden by the fault block. Owing to the weight of the fault block the strata representing the western arm of the syncline have been overturned beneath it and dip to the east instead of to the west.

While the general elevation of the basin is some 2,000 feet lower than that of the ranges, it is by no means equal throughout, but shows differences of over 1,000 feet, or even 2,000 feet if we compare the height of the valley of the Saskatchewan or Brazeau with that of some of the higher ridges in the basin between them. These ridges are due to the resistance of certain beds to erosion, and with the intervening valleys they can be described best in connexion with the formations of which they are composed. We shall describe these in ascending order as they outcrop westward from the Big Horn range.

As stated above, the Upper Banff shales flank many of the spurs of this range and so produce few prominent topographic features. The succeeding Fernie shales are easily eroded and, therefore, occupy a depression just inside the range. This depression has been eroded chiefly by small tributaries of Grave creek and the other two creeks previously mentioned with it. The three cirques described as cutting through the Big Horn range, also produce hollows by widening out along the strike of this formation. Even on the divides between these cirques and the heads of the tributaries of Grave and the other creeks, the Fernie shale produces a depression of more than a hundred feet in depth.

West of the depression occupied by the Fernie shale is a line of hills formed of the harder beds of the Kootanie formation. These hills are sometimes less than 1,000 feet lower than the Big Horn range, but vary greatly in height. Owing to the composite character of the formation, these hills have been dissected into a large number of narrow and very irregular ridges by the action of erosion on the beds of shale which lie between the strong sandstones and conglomerates.

The Dakota sandstone offers less resistance to erosion than the Kootanie and usually outcrops on the western slopes of these hills, but gives rise to a few minor ridges where detached from them.

On the Dakota formation lie the Benton shales, which are of considerable thickness and very soft. As a consequence the lowest hollow in the basin, with the exception of the stream valleys, is situated on their outcrop. This hollow, though it contains some muskegs, is usually well drained by small tributaries of the larger streams.

West of the hollow occupied by the Benton shales is a ridge composed of the hard beds of the Cardium sandstone. In addition to the valleys of the Saskatchewan, Brazeau and Big Horn, the continuity of this ridge is broken only by the gaps occupied by two tributaries of Grave creek and three of the South Branch. On the whole, it presents a remarkably even crest line at an elevation of about 800 feet above the hollow east of it. It is notched, however, by several small streams on whose course it makes falls, and so protects the succeeding Claggett shale from being trenched by rapid erosion.

The outcrop of these shales produces another hollow parallel to that of the Benton shale, but probably 200 feet above it. The hollow is from 1 to 3 miles wide, and owing to the poor drainage it often contains muskegs. Along its western edge the strata

are usually buried under deposits of boulder clay, laid down by the glaciers descending from the cirques under the first range or from the high ridges capped by the remnants of the Judith River formation. This is the youngest formation represented, and its distribution can best be understood and described in connexion with further details of the tectonic structure of the basin.

As has been remarked this is synclinal. Along the Saskatchewan, the eastern limb dips at a low angle, but when the axis is reached, about 2 miles from the first range, the western arms turns up very sharply and near the fault line bounding the great fault block to the west has been slightly overturned. Just north of the river the Palæozoic limestone probably overrides the Upper Banff shale, but this is uncertain on account of a mantle of drift which conceals the contact. A little farther north, however, the Fernie shale was seen directly under the fault escarpment, while still farther on occurred the Kootanie sandstones. In order to explain this overriding of different formations, within short distances, by the same block of strata, it is supposed that the syncline existed before the development of the fault plane, and that its axis converged with the latter. When the block was shoved up, its weight would overturn the western arm of the syncline as far as possible and then truncate it, pushing the upper portion before it. Erosion would afterwards remove the broken portions and expose the upturned strata of the western arm in contact with the block and, owing to the convergence of the axis of the syncline with the fault plane, the exposed strata would be of successively higher formations in the direction of the convergence. Moreover, as the axis approached the fault plane there would be a smaller weight of overlying strata to resist the overturning of the arm. In agreement with this, as we go north, the dip of the eastern limb of the syncline becomes steeper and the western is farther overturned from the vertical. Finally, after the Dakota sandstone, Benton shale, Cardium sandstone and Claggett shale have been overridden in turn, and the axis of the syncline has approached to within half a mile of the fault, the dip of the beds in both arms is so nearly alike that both might be included in a section of the Judith River, should a geologist fail to note the sharply folded strata in the immediate vicinity of the axis.

Between the Big Horn and the Saskatchewan the Judith River caps a high hill in the form of a flat syncline. North of the former stream, however, the eastern limb of the syncline has a very considerable dip, and here it forms a ridge 5 miles long, which gradually rises and approaches the first range. From this point to the head of George creek, a tributary of the South Brazeau, the Judith River sandstones remain only as the capping of a few detached hills, but usually preserve the axis of the syncline. This gradually swings round and begins to diverge again from the fault plane, thus leading to a repetition, in the opposite order, of the structural features we have described. As its axis diverges, this syncline flattens also, and the Judith River sandstone on its eastern arm again forms a ridge, which becomes lower as it recedes from the first range.

To the south of Rocky creek, directly under the limestone of the main fault escarpment, the Kootanie sandstones outcrop, and some coal was found, but owing to the crumpled and fractured state of the measures it might be said to occur in pockets rather than seams. Its presence here is important nevertheless, for it furnishes a proof that the coal seams found on the eastern side of the basin probably extend across it, and it is to be noted in this connexion that, in every case in the areas south of the Saskatchewan where two sections can be compared from the same basin, or from two or more parallel basins, the more westerly section invariably shows more numerous and thicker seams.

SECTIONS OF THE COAL MEASURES AND ANALYSES.

In order to assist in the determination of the depth to which shafts will require to be sunk to reach the coal in different parts of the basin, a section was measured of the overlying strata to a point about half way up in the Claggett shale. This section

has not yet been worked out, but a section through the measures is appended. This was measured on Trail creek, and it is confidently believed that additional seams of coal could be exposed by the use of pick and shovel, for which task the demands of our topographic work left us no time. I therefore add two partial sections covering the most productive portion of the measures where they have been thoroughly examined. These have been very kindly furnished by Mr. J. McEvoy, lately of this 'Survey' and now in the employ of the German Canadian Development Company, which has purchased claims on the Big Horn and South Brazeau creeks. With a party of eight men he drove short tunnels into the various seams and secured carefully averaged samples, from which analyses were made by Milton Hersey, M.Sc., official analyst, Province of Quebec. We also publish these, and two analyses of specimens of coal from seams measured by our party. These were made by Mr. F. G. Wait. The following are the sections from the top downwards:—

1. That on Trail creek:—

1.	Black and gray shale from the base of the Dakota sandstone..	131 feet.
2.	Coal..	2·4 "
3.	Shale..	2·9 "
4.	Coal..	4·7 "
5.	Black shale, with ribbons of coal..	161 "
6.	Coal..	3·9 "
7.	Sandstone..	2·5 "
8.	Coal..	2·4 "
9.	Black shale, and shaly sandstone..	127 "
10.	Coal..	4·5 "
11.	Black and brown shale..	131 "
12.	Sandstone, shaly below, heavy bedded above..	54 "
13.	Black and brown shales..	53 "
14.	Coarse sandstone, weathers yellow..	37 "
15.	Black and brown shale..	56 "
16.	Heavy beds of sandstone..	22 "
17.	Coal, with 0·6 foot shale two-thirds way up..	6·6 "
18.	Coal seam not dug out, and black shale..	5 "
19.	Siliceous sandstone..	8 "
20.	Black shale, with seam not dug out..	179 "
21.	Coarse gray sandstone..	7 "
22.	Sandstones, separated by black shales..	56 "
23.	Black shale..	33 "
24.	Coal..	2 "
25.	Sandstones, separated by black shale..	74 "
26.	Black shale (fossil shells)..	154 "
27.	Gray sandstone..	35 "
28.	Black shale, and shaly sandstone..	133 "
29.	Siliceous sandstone..	10 "
30.	Black shale..	57 "
31.	Massive gray sandstone..	59 "
32.	Concealed, probably black shale..	85 "
33.	Sandstone..	6 "
34.	Sandstones, and black shale (crumpled) approximately..	100 "
35.	Heavy bed of gray sandstone..	48 "
36.	Black shale..	12 "
37.	Heavy bed of gray sandstone..	32 "
38.	Beds of sandstone, separated by black shale and ribbons of coal.	123 "
39.	Black shale..	54 "
40.	Siliceous sandstone..	6 "
41.	Conglomerate bed, pebbles chiefly of black chert..	12 "
42.	Shaly sandstones, separated by black shale..	38 "
43.	Siliceous sandstone..	3 "
44.	Black shale, and shaly sandstone..	103 "
45.	Coarse gray sandstone..	14 "
46.	Black shale, and shaly sandstone..	97 "
47.	Siliceous sandstone..	2 "
48.	Black shale, and shaly sandstone (shows contemporaneous erosion)..	110 "
49.	Succession of black shale, and shaly sandstone with 3 ribbons of coal, 0·6, 1·4 and 0·3 feet, respectively..	76 "
50.	Siliceous sandstone, weathering blue..	3 "
51.	Black shale, and shaly sandstone, with 2 ribbons coal..	126 "
52.	Sandstones, with 2 ribbons coal..	6 "
53.	Siliceous sandstone..	8 "
54.	Black shale, with 3 ribbons coal under 1 foot..	109 "
55.	Sandstone, with ripple marks and impressions of rain drops..	21 "

56.	Siliceous sandstones, separated by black shale	68	feet.
57.	Gray, siliceous sandstone	50	"
58.	Black shale	42	"
59.	Thin bedded sandstone, with fossil plants	40	"
60.	Black shale, with one thin bed of sandstone	47	"
61.	Siliceous sandstone, weathers red	37	"
62.	Concealed, probably black shale	158	"
63.	Heavy bed of sandstone	30	"
64.	Concealed, probably black shale	33	"
65.	Sandstone: gray on fracture, but weathering brown	9	"
66.	Black shale	74	"
67.	Gray sandstones, with partings of black shale	173	"
68.	Gray sandstone	5	"
69.	Black shale, with ribbons of sandstone	75	"
70.	First heavy sandstone bed above Fernie shale	10	"

Mr. McEvoy's section measured on George creek is as follows:—

	Coal	0·5	feet.
	Rock	70	"
No. 1.	Coal	0·3	"
	Rock	1·5	"
	Coal	1	"
	Rock	40	"
No. 2.	Coal and shale	5	"
	Rock	60	"
No. 3.	Coal, with three bands shale	3	"
	Shale	0·5	"
	Coal	4	"
	Rock	110	"
	Coal	0·8	"
	Rock	240	"
No. 4.	Coal, with three bands of shale, 1 inch each	10·6	"
	Rock	110	"
No. 5.	Coal, dirty at outcrop	3	"
	Shale and coal	0·3	"
	Coal, one band of shale, 2 inches	4·3	"
	Rock	80	"
	Dirty coal	1·7	"
	Coal	1·5	"
	Shale	0·5	"
No. 6.	Coal, with band of shale, 2 inches	6·7	"
	Rock	30	"
No. 7.	Coal	1	"
	Rock	40	"
	Coal	0·5	"
	Shale	2	"
No. 8.	Coal, with 3 inch shale band, seam locally reduced in thickness	5	"
	Rock	220	"
No. 9.	Coal	8	"

Undetermined thickness of rock, and possibly other seams:—

No. 10.	Coal, locally reduced by a crumple	1	feet.
	Rock	100	"
	Coal	1	"
	Shale	1·5	"
No. 11.	Coal	9·5	"
	Rock	90	"
No. 12.	Coal	12	"
	Shale	0·2	"
	Dirty coal	2	"
	Rock	200	"
No. 13.	Coal	3	"
	Rock	150	"
No. 14.	Coal	3·2	"
	Rock	about 1,000	"
	Rock, with 7 small seams, 2 feet and under	125	"

The section on Big Horn creek includes only the upper part of the measures. It is as follows:—

Seam A	Coal	5	feet.
	Rock	7	"
Seam B	Coal	4·5	"
	Rock	8	"
Seam C	Coal	7	"
	Rock	250	"

Seam D	Coal	13	feet.
	Rock	130	"
Seam E	Coal	2	"
	Rock	140	"
Seam F	Coal	2	"
	Shale	0·8	"
	Coal	2·2	"
	Coal and shale	3	"
	Coal	6	"
	Rock, with several seams of coal under 2·3 feet	700	"
Seam G	Coal	8	"

The following are Dr. Hersey's analyses of Mr. McEvoy's samples from a number of seams in these sections; those numbered being from the Brazeau, while those designated by letters are from the Big Horn:—

Mark.	Moist.	Vol. Comb. Mat.	Vol. Mat.	Fix. Carb.	Ash.	Coke.	Sulph.
3	·28	29·04	29·32	64·52	6·16	70·68	·68
4	·90	27·60	28·50	60·08	11·42	71·50	·46
6	·50	20·10	20·60	49·62	29·78	79·40	·56
8	·36	26·72	27·08	62·35	10·57	72·92	1·21
12	·56	22·82	23·38	70·30	6·32	76·62	·69
14	1·46	24·04	25·50	67·93	6·57	74·50	·70
A	·38	22·62	.....	68·85	8·15	77·00	
B	·20	22·95	.....	69·78	7·07	76·85	
C	·32	19·51	.....	71·47	8·70	80·17	
5	·34	25·28	.....	68·13	6·25	74·38	
9	·30	24·58	.....	62·95	12·17	75·12	
11	·20	24·33	.....	69·34	6·13	75·67	

Nearly all of these samples formed firm coherent cokes, while large samples tried by Mr. McEvoy in a small coke oven on the Big Horn produced an excellent coke.

Three natural exposures of coal were found on Grave creek, and were measured. No. 1 gave the following result: coal 9·3 ft., shale 1 ft., coal 2·2 ft.; No. 2: coal 5·2 ft.; No. 3: coal 5·4 ft. Analyses of the 5·2 ft. seam here, and the 6·6 ft. seam (No. 17 in the section) on Trail creek, gave the following results:—

Seam.	Moisture	Volatile Comb. Matter.	Fixed Carbon.	Ash.
5·2	·96	30·80	64·88	3·36
6·6	1·04	22·61	68·89	7·46

Both yielded firm coherent coke.

STEAM COALS OF THE CASCADE BASIN. LIGNITE AREAS OF ALBERTA AND SASKATCHEWAN. PRODUCTION OF COAL IN ALBERTA AND SASKATCHEWAN.

(D. B. Dowling.)

The examinations of the summer extended over a wide field, and included short visits to two localities in the Cascade basin, where prospecting operations have been carried on. A more detailed examination was made of the coal measures of the Edmonton district—for which a special report will be prepared—and several visits made to points in Saskatchewan, where prospecting has been carried on in the hope of finding coal. As these different visits were not to contiguous areas, fuller details will be given in this report of the outlying ones than of the Edmonton district, since the latter entails the preparation of a map.

STEAM COALS OF CASCADE BASIN.

At present the only mines in operation are at Canmore and Bankhead, but during the past season, several parties have been prospecting for coal as far south as the Kananaskis river. One locality visited at Canmore was on an area north-west of the property controlled by the Canadian Anthracite Company, and the openings made are on sec. 1, tp. 25, R. 2, west of 5th meridian.

At the time of my visit the prospect holes had fallen in and the examination was not at all satisfactory. Two seams had been discovered and openings made. There appeared to be a workable seam with at least 4 feet of clean coal. Below this seam, a series of coal and slate, 8 feet thick, may contain another workable seam, but the prospect hole was considerably fallen in and needed cleaning out. Although there are but few exposures, the measures appear to be on the strike of those at Canmore, and there is a possibility that the folding found there may not be as sharp in the area to the north-west. The seams probably belong to the upper series as found in the Canmore mine, judging from the analysis of the coal, which shows it to be a steam coal of the Canmore grade.

Analysis by F. G. Wait:—

Water	1·80
Volatile combustible matter	14·71
Fixed carbon	76·77
Ash	6·72
	100·00

This analysis appears to indicate a coal a trifle softer than the average of the Canmore seams and it is, no doubt, a good steam coal.

Prospecting has also been carried on in the sections to the south, near Wind mountain, and several seams have been opened, but the operations were confined mainly to the rocks along the slope of the measures, hence the whole section was not proved. Most of the seams found are on sec. 29, tp. 23, R. 9, west of 5th meridian.

On the Kananaskis slope a very complete examination of the measures was possible, as most of the seams had been discovered and opened by private parties during the present season. The work of prospecting the area was not difficult, as gullies, cutting across the measures, afford good facilities for the examination of exposures and give ready access to the seams. The lower portions only were hard to examine, owing to the greater accumulation there of loose material from the higher slopes.

The examination proved that the formation contains more coal than was found at the old Marsh mine, in the gully on sec. 12, tp. 24, R. 10, west of 5th meridian. This might be expected, however, since the whole thickness of the formation was not included in the examination at that point. The upper part of the measures, omitted before, was explored this season near Ribbon creek, a branch of the Kananaskis crossing sec. 3, tp. 23, R. 9. This makes a nearly complete survey of the coal seams to be found in the measures; the upper part was apparently complete, the only possible gap left uncovered being a band of measures about 400 feet in thickness at the bottom, thickly covered by debris and which might contain a few seams.

List of Seams in Measures.

For a complete section of the measures it is necessary to consider the exposures disclosed at three localities.

At the first locality, on a small gully in section 3, running to Ribbon creek, the upper measures are exposed with coal seams which were dug into with a view of showing their character and thickness. The coal seams in descending order are as follows:—

Coal seam, No. 1.. .. ..4′–0″.
" No. 2.. .. ..4′–6″.
" No. 3.. .. ..2′–6″.
" No. 4.. .. ..2′–0″.
" No. 5.. .. ..4′–0″.
" No. 6.. .. ..4′–6″.. ..Two bands of shale, 4″ and 2″, near centre.
" No. 7.. .. ..4′–6″.. ..Fairly clean.
7′–0″.. ..Dirty.
" No. 8.. .. ..2′–0″ } ..Too small to mine.
1′–6″ }
" No. 9.. .. ..7′–0″.. ..Clean.
" No. 10.. .. ..9′–0″.. ..Fairly clean.
" No. 11.. .. .15′–0″.. ..Bright.

Below seam No. 11, when followed along the strike of the rocks north to a small draw running down the face of the hill, another set of seams was exposed.

Continuing the list of seams from above:—

Coal seam, No. 12.. .. ..2′–0″.
" No. 13.. .. ..3′–0″.
" No. 14.. .. .12′–0″.. ..Streaks of shale in seam.
" No. 15.. .. ..3′–6″.. ..Clean.
" No. 16.. .. ..3′–0″.
" No. 17.. .. ..4′–6″.
" No. 18.. .. ..4′–0″.
" No. 19.. .. ..9′–0″.. ..Hard and bright.

There is then an interval not prospected, but on the face of the hill about 2 miles north, on section 16, or near its north boundary, a seam supposed to be No. 14 seam of the last section, or at least a similar seam in about the same part of the measures, was found. At 500 feet below this exposure several seams were found and probably are those given above. The following seams appear to be additional:—

Coal seam, No. 20.. .. .10′–6″.. ..8 feet clean.
" No. 21.. .. ..4′–0″.. ..Clean.
" No. 22.. .. ..3′–0″.. ..Bands of shale in coal.
" No. 23.. .. ..9′–0″.

As remarked before, there may be a few covered seams below this, but the section as shown above contains about twenty seams which might all be mined; sixteen of them are certainly thick enough, having an aggregate thickness of 89 feet of coal.

Character of Coal.

The few analyses I have seen of outcrop samples show that these coals can be classed with the Canmore coals, which are of great value as steam producers. A few only of the seams, away from the outcrop or in the vicinity of the fault, may prove harder; but none of them, apparently, go higher than semi-anthracite in grade; the

exceptions being purely local. In this respect the Canmore seams show the same variation, since a sample from No. 3 Canmore was classed as anthracite. Even if a few seams do run to anthracite, the market will not be over supplied. The greater portion of this coal will serve for steaming and should be better for gas producer use than anthracite. Using the ratio between fixed carbon and volatile constituents as a standard, the analyses of eight samples of the seams show that three of them are softer and higher in volatile combustible matter than any of the Canmore coals. These samples were from seams Nos. 5, 10 and 9.

Of the rest all can be compared with the Canmore upper or softer seams, as follows:—

No. 17 can be classed with No. 6 Canmore.
No. 7 can be classed with No. 5 Canmore.
No. 18 can be classed with No. 5 Canmore.
No. 19 can be classed with No. 4 Canmore.
No. 11 can be classed with No. 2 Canmore.

The Canmore coals have been in steady use on Canadian Pacific Railway locomotives.

No. 11 is the hardest coal among the samples, though about the same in grade as No. 19. This result is very gratifying, since on the main line of the Canadian Pacific railway, the Canmore mine, capable of producing only 600 tons per day, was thought to be the only mine in the district that could supply steam coal. If the measures near the Kananaskis are mined, the long haul from the mines on the Crowsnest branch will be saved, and this area become one of the large producers.

Quantity of Coal.

The number of seams discovered, as well as the undisturbed position of the measures, assure a very large total of mineable coal. The block which starts at the Three Sisters and continues past the Kananaskis, is raised quite high at the watershed between the Bow and Kananaskis, but can be mined from either side. There is a slight syncline in the top measures, but the lower measures dip to the fault, so that a large part is gently dipping to the south-west. On the block behind the Marsh mine the measures become nearly flat, but to the south-east assume a greater dip toward the mountains, and a narrow belt only, near the fault, will be broken up. There is also a probability that where there is folding, as in the Canmore mine, the coal will be characterized by increased hardness.

Assuming that where the whole thickness of measures is present there is an average of 90 feet of coal capable of being mined, the available coal amounts to 150,000 tons to the acre, or 90,000,000 tons to the square mile. For the average of the area as mapped, allowing for dirty seams and coal left in the mine, approximately 65,000,000 tons per square mile should not be an excessive estimate.

Access for Mining.

On the slope to the Bow river, a stream, heading in a cirque north of Wind mountain, gives a workable grade down to the large open valley eroded out to the limestone range and making an excellent site for a colliery. The measures on each side of this valley can be attacked, and several gullies descending from the higher ground give access to the measures toward the height of land.

On the Kananaskis side the valley of this stream is wide close to where the coal measures cross it, hence there is ample room and an excellent site for a town. The measures are cut nearly to the level of this valley by a small stream coming from north of Mount Kidd, so that there are four points from which the measures may be mined: two from either side of Ribbon creek, the stream noted above, and the other two from the Kananaskis valley.

The largest and most important field is that lying north of Ribbon creek. Here there is a natural terrace on which to erect the necessary buildings in the vicinity of the tunnels. It might also be noted that this coal area being above the level of the river can be mined from the level entry, as at Bankhead, affording natural drainage and very easy haulage for mine cars.

The Bankhead mine, having its coal above the river level, and therefore capable of being mined from the level of the entry, has a great advantage over the Anthracite mine, which was above the coal. Similarly, the area south from Three Sisters mountain to past the Kananaskis should have a measure of superiority over that to the north at Canmore, which is being mined by means of a long slope. The fact that this new area contains steam coal, also assures cheap mining, as it is not necessary to separate the small coal from the lump. And it is probable that run of mine can be used, if care is taken to separate the slate from the clean coal; otherwise the slack will have to be washed.

The new area thus added to the steam coal producing class may roughly be estimated at about 15 square miles, of which 6 to 8 square miles north of Ribbon creek is proved to have about 500,000,000 tons of available coal.

LIGNITE AREAS OF ALBERTA.

The principal mining centre for the production of lignite is at Edmonton, where the population is densest. Over a great part of the coal belt passing through this district, there are numerous small mines from which the statistics of output could not be easily obtained, as the coal is used for a purely local market. The Edmonton mines, including those on both sides of the river, produced in 1907, 112,558 tons. This amount was all disposed of in the immediate vicinity, very little of it being shipped any distance by rail. The mines which will be called upon for a larger output for towns along the Canadian Northern railway and Grand Trunk Pacific, outside the coal belt, will naturally be those connected with the railway lines. With the advent of the two railways above mentioned, several companies have turned their energies towards sinking shafts near the railways. Of these the Parkdale, in Edmonton, was the first to start shipping by car. This mine is raising coal from 200 feet below the surface; mining the continuation of the Clover Bar seam which here is between 4 and 5 feet thick. This is the only mine in this vicinity in which any gas has been discovered, necessitating the exclusive use of safety lamps.

A new mine, the Twin City, situated alongside the railway spur connecting Strathcona with Edmonton, has only recently sunk a shaft, and the installation of boilers and winding machinery is being hurried. At a depth of 135 feet the Clover Bar seam was reached, but it had a clay parting. The shaft was continued to a depth of 161 feet, to another seam which has a firmer roof, although similarly split by clay partings. On the property lying east of this shaft, several borings have been made, and there is reason to believe that the clay partings will disappear in that direction. Tunnels on both the seams are under construction and mining will soon commence. Another mine which is being connected with the railway is the Clover Bar, situated on the west side of the river just above the Grand Trunk Pacific bridge. The old opening was on the river bank, and coal is still being hauled to Edmonton by teams. A point selected for a shaft, chosen with a view to the construction of a switch from the Grand Trunk Pacific railway, showed, when the coal was reached, a cover of 100 feet. In a depression between this shaft and the river an air shaft showed only 35 ft. cover. Operations are now in progress to connect these openings with the old mine. The seam in the old mine runs from 7′-9″ to 8′-4″ in the northern part of the old workings, and is about 8 feet thick at the new air shaft.

The other mines, which are very numerous on both banks of the river below Edmonton, are all supplying the local market, drawing the coal by team to town. Some are being equipped with steam hoists, and all appear to be working the Clover

Bar seam, with the exception of the White Star and Strathcona mines, south of Edmonton, which appear to have a higher seam.

The following mines during 1907 yielded the output indicated. Those opened during the present year have not made returns, and no returns appear for several that are known to be producing; so that the output for the district is greater than that given in the schedule.

Name of Mine.	Locality.	Seam.	Thickness.	Output, 1907.
			Feet.	
White Star Mine	5 miles S. of Strathcona	Probably Strathcona	5'–8"	12,000
Strathcona	Strathcona	Strathcona	5 ft.	18,368
Humberstone	Clover Bar	Clover Bar	8 ft.	8,665
Milner Coal Co	"	"	7 to 8 ft.	2,000
Clover Bar	"	"	8 ft.	13,281
Parkdale	Edmonton	"	4 to 5 ft.	3,800
Standard	"	"	4'–6" to 6 ft	21,200
Fraser & Freeman	Clover Bar	"	6 ft.	5,500
Daly	"			4,700
Keith & Fulton				4,294
Byers	Clover Bar	Clover Bar	7 ft.	2,010
Ottwell	"	"	7 ft.	9,025
Davkins				580
Lindsay	Namao	Probably Clover Bar	4 to 5 ft.	2,191
Smith & Steffos		" "	5 to 7 ft.	1,190
Cardiff	Morinville	" "	10 to 15 ft	Large output at present developing
Alberta	"	" "	10 to 15 ft	
Twin City	Strathcona	Clover Bar and Twin City		
Rosedale	Edmonton	Clover Bar	4 to 5 ft.	
Namao Coal Co	Namao	Probably Clover Bar	5 ft.	
United Collieries	Edmonton	Clover Bar	6 ft.	
Frank Coal Co	"	"	4 ft.	
Dawson	"	"	6 ft.	
Rupert's Land Coal Co	Oliver	"	8 and 6 ft.	

On the Grand Trunk Pacific railway, east near Beaver lake, a mine is being opened at Tofield on an 8 foot seam.

On the Wetaskiwin branch of the Canadian Pacific railway there are small mines near Camrose, and from the Battle river coal is being drawn to other stations on the line. In the vicinity of Bawlf a few seams are found south toward the Battle river, and at Hardisty there appears to have been a 3 foot seam discovered. On the Calgary and Edmonton line, near Hobberma, pockets of coal just beneath the boulder clay have been discovered, and may soon be mined. The short branch east from Lacombe, crosses a very important coal horizon, but as yet no drillings have been made, although coal is being mined on the banks of Red Deer river, and east of Tail creek at Nevis, a 4 foot seam with a good roof is being mined.

In the Kneehills country, which as yet has no railway facilities, four mines are operating for local trade; two on Threehills creek, one on Ghost Pine creek, and one at Carbon on the Kneehills creek. Two or three mines, not in continuous operation, are also located in this vicinity. Other mines supplying lignite south of the main line of the Canadian Pacific railway are those at Crowfoot, and smaller ones near Medicine Hat.

The general output of lignite for Alberta for 1907 is given in the provincial report as 639,335 tons. This includes the mines of Lethbridge, Taber, Magrath, Woodpecker, Lundbreck, High River and Pincher Creek, a total of thirty coal producing mines. Their product should be called lignitic coal, and thus separated from the true lignites.

As the principal mines at Lethbridge and Taber produced 350,000 tons, it is probable that there should be deducted from the total as given above, about 400,000 tons, leaving an output of lignite amounting to approximately 240,000 tons. Of this, Edmonton and vicinity produces more than half, for Edmonton alone reported for 1907, 112,588 tons. Morinville mines are now large producers. The small mines along the Wetaskiwin and Lacombe branches do not give returns, but if added to that from Red Deer river, Kneehills creek, Crowfoot and Medicine Hat, would augment the coal production of Alberta considerably.

LIGNITE AREAS OF SASKATCHEWAN.

Eagle Hills Creek.

The country through which the Moosejaw-Lacombe branch of the Canadian Pacific railway has been surveyed is mostly bare prairie, and the difficulty in settling this part, lying north of the Saskatchewan, is largely due to the want of fuel. A small seam of coal having been found by boring on sec. 14, tp. 32, R. 21, west of 3rd meridian, the Saskatchewan government spent considerable money in prospecting work. A shaft was sunk to the seam, and a drift run parallel to the face of the hill. The enterprise was abandoned, however, because enough coal was not found. The exposures in the vicinity show that the measures are part of the Judith River (Belly River) formation, but as they are apparently well down in the beds there is no very great chance of finding other seams below. The hills on the south side of Eagle Hill creek, as far east as range 17, west of 3rd meridian, contain practically the same rocks, with outcrops of small streaks of coal.

On sec. 18, tp. 31, R. 20, at a spring, a bore-hole was put down without finding coal. In the hill behind the spring, practically the west bank of the valley of Eagle Hill creek, a streak of brown sand with plant remains and a few streaks of coal seems to represent the same horizon as on sec. 14, tp. 31, R. 21, where 18 inches of coal was found. East of this, in a coulee crossing sec. 5, tp. 31, R. 17, west of 3rd meridian, several prospect holes have been put into the hillside. Nothing, however, but brown sandstone with streaks of coal were found.

The higher country which lies to the west of the latter place may have more of the upper beds, and there is a slight chance of finding seams in the upper part of the formation. The area will necessarily be small, as these hills are not of any great extent.

The question of fuel for this part will be solved only when railway connexion is made to the west, and the coal belt in the vicinity of Alex and Nevis is crossed. This coal field appears to be able to supply the country east, for even at present, coal is being mined there, though not to the extent that will soon be called for.

Inasmuch as the provincial government deemed it necessary to make some effort to find coal across the Saskatchewan, a visit was made to the north bank above the ferry on the Swift Current and Battleford trail. The top of the Judith River (Belly River) formation runs beneath the Pierre on the western edge of range 15, west of the 3rd meridian, at the Saskatchewan river, and the continuation of the coal seam of Medicine Hat should be found in the banks in that vicinity. Where slides have occurred in the banks a few exposures of parts of coal seams have been found, and at one of these, viz., sec. 14, tp. 20, R. 16, west of 3rd meridian, the indications are that the seam from which these pieces had slidden was of the following section:—

Clay roof.	
Lignite	2′–0″
Black slate	1′–6″
Lignite	2′–0″
Black shale	0′–6″
Soft sandstone floor.	

The Saskatchewan government was advised that boring should be done on the plateau behind, with a view of locating the seam away from the slides, before any

attempt was made to open a tunnel or sink a shaft to strike the seam. The coal contains a high percentage of woody matter, and is evidently not a high grade of lignite. The analysis of this coal, an average of the two parts, gave:—

Moisture	16·05
Volatile matter	55·05
Fixed carbon	22·35
Ash	6·55
	100·00

Dirt Hills.

South-west from Rouleau in tp. 12, R. 24, west of the 2nd meridian, several exposures of the Laramie rocks are seen, on the north-west face of the Coteau. The exposures that are visible from a distance occur on sections 22 and 27, and include many thin seams of lignite, up to 1 foot in thickness. The general appearance of these exposures, however, leads to the conclusion that they are all more or less slides, hence none of these seams can be described as in place.

On the eastern edge of the township and at the foot of the hill, coal in greater thickness has been found. On the south half of section 26, farmers have uncovered a 2 foot seam of inferior lignite. This has been taken out by stripping the surface, but this method cannot be carried on economically after the gradually increasing thickness of the cover becomes considerable. On the north-west quarter of section 24, in the side of a small gully, coal has been found with less cover, and several of the farmers have taken out fuel for home consumption. Southward the cover should amount to 50 feet, and the roof be of clay, so that mining will be difficult:—

The seam shows at the top	1′–4″
Clay parting, varying up to	0′–6″
Solid lignite, lustreless	2′–0″
Actual thickness of coal in seam	3′–4″

The grade is poor, as shown by the following analysis:—

Moisture	21·30
Volatile matter	38·05
Fixed carbon	16·09
Ash	24·56
	100·00

On the section to the south, No. 13, a small seam of about 6 inches was found, but although of much better grade, it is unfortunately too thin to mine. The following is the analysis of a sample taken from this seam:—

Moisture	18·10
Volatile matter	47·54
Fixed carbon	25·31
Ash	9·05
	100·00

NOTES ON THE PRODUCTION OF COAL IN ALBERTA AND SASKATCHEWAN.

The output of the mines of these two Provinces, as gleaned from census and provincial reports, shows a very great increase over the past. The coal production in the north-west for the four years ending 1906 is as follows:—

Production of Coal, in Tons.

—	1881.	1891.	1901.	1906.
Alberta	1,590	174,131	280,000	1,385,000
Saskatchewan			40,909	170,582
	1,590	174,131	320,909	1,555,582

The rapid rise in the rate of production suggests that it must be due to increase in population, extension of railways and introduction of manufacturing industries. This is borne out by the population returns covering the same period:—

Population.

—	1881.	1891.	1901.	1906.
Alberta	18,075	26,277	68,376	185,412
Saskatchewan	19,679	40,522	90,564	257,763
Manitoba	62,260	152,506	255,211	365,688
	100,014	219,305	414,151	808,863

The above table shows that the coal consumption is increasing at a much more rapid rate than the population of the three provinces; but as Manitoba is partly supplied from eastern markets, the population of this Province should not all be considered as consumers, and only the population of Alberta and Saskatchewan need be used in the statistical comparison. On this view, the coal production follows more closely the increase in population. In considering, therefore, the future needs of the north-west provinces, it is quite evident that if the present mines are working to nearly their full capacity, others must be opened in the near future. The first need of the population is domestic fuel. This is being supplied mainly from local mines in the lignite belt. The next demand is for facilities for the shipment of produce to market, and this means increased consumption of coal by the railways. Following increasing settlement is always the building of towns and establishment of factories, mills and other power-using works and institutions; so that not only domestic fuel, but coal for steaming and power will be in increasing demand.

This seems to be a manifest reason why the added population calls for a comparatively greater per capita consumption than when the density of population is less. The coal available in Alberta is of all grades, from anthracite to lignite, and mines producing each kind have been opened. In Saskatchewan the lower grades only are to be found.

Output of Anthracite.

Up to the present time the output of anthracite in Canada has been confined to one locality, namely, the Cascade basin in the Rocky mountains. Mining operations have been carried on at two mines. The first, at Anthracite near Banff, having worked out a small part of the area controlled, announced that the supply was exhausted. This led to the opening of a new mine on the adjoining property at Bankhead. A record of this may be read in the tabulated output of the two mines. The one at Anthracite closed down in 1903, and the new mine at Bankhead started the following year.

That the demand for anthracite was not satisfied by the previous mine is shown in the rapidly increased output that followed the completion of the installation of the new mine:—

Output of Anthracite.

	Tons.
1898	23,000
1899	22,000
1900	17,549
1901	14,742
1902	16,587
1903	5,185
1904	23,363
1905	43,653
1906	235,597
1907	305,700

The market has been extended through the west by the rapid growth of the towns, and the evident preference for hard coal for heating purposes. The source of power most in favour in these towns is the gas producer.

Owing to the trouble that the virtually inexperienced operators have with tarry matter from the softer coals, the small-sized coal from Bankhead is in common use. Larger plants are being installed, such as the power plant for the electric railway at Edmonton. This will mean a large consumption of coal. Presumably the local coal will be used as far as possible, but an admixture of anthracite will probably be found necessary. The town of Wetaskiwin is operating its electric lighting plant by means of gas producers, using anthracite exclusively.

Steam Coal.

The use of coal for the production of steam power in railway transportation is divided between the low grade bituminous and lignitic coals, and the harder bituminous that are not distinctly coking. Some of the latter, such as the Canmore coals, approximate to the anthracite class. The coal supply for locomotive purposes is derived from all the Rocky Mountain mines, except the anthracite mines, as well as from those in the vicinity of Lethbridge. In submitting statistics of output, we are compelled to make an approximation only, because the Lethbridge coal has, in some of the reports issued, been included in the returns from lignite mines.

From the table of total output, it will be seen that in 1881, with a total production of 1,590 tons, very little could have been used for railway purposes, and probably all coal used for this purpose was imported. In 1891 the total output was 174,131 tons, of which about 50,000 tons were probably used for domestic purposes. In 1901 the estimated output was 192,000 tons; for 1906 the steam coal output for the mountain areas was 546,623 tons; while it is estimated that 362,780 tons of lignite coal were also used. Between the last two dates several mines were opened on the Crowsnest branch of the Canadian Pacific railway.

The output of steam coal used in the country shows the increased production necessary to meet the demand caused by the increased mileage of the railways. The completion of the Grand Trunk Pacific railway will call for a further advance in output within a year, and it will probably be necessary to open new mines to meet the demand.

The approximate tonnage used, as noted above, is as follows:—

Year.	Local Coal Used.
1881	
1891	124,131
1901	192,000
1906	908,403

Coking Coal.

The coking coals are confined to the areas in the vicinity of the Rocky mountains. The coals of the Cascade basin are generally too hard to coke. The mines, therefore, on the Crownest branch and the areas north and south of these, are at present the only producers of coke.

Coking coal of the best grade has, however, been found north of the Saskatchewan, and when railway connexion has been opened, the market for northern British Columbia will be supplied. The production of coke in Alberta is of recent date, hence the tonnage used for this purpose is given for three years only:—

Year.	Tons.
1905	71,292
1906	103,936
1907	112,887

Lignite.

As the production of this coal altogether depends on the demand in the domestic market it should show an increase commensurate with the growth of population. That

this is the case may be seen from the following table. Manitoba being within reach of the eastern market, does not depend on the local supply to the same extent as the other provinces, consequently, a certain percentage of the coal used in Manitoba as well as in Alberta is imported. The figures are, however, in harmony with the general statement that increased population means a proportionate increase in the consumption of local coal.

Population.

	1891.	1901.	1906.
Alberta	26,277	68,376	185,412
Saskatchewan	40,522	90,564	257,763
	66,799	158,940	443,175
Manitoba	152,506	255,211	365,688

Lignite Mined—In Tons.

	1891.	1901.	1906.
Alberta	30,000	81,682	240,000
Saskatchewan	20,000	40,909	170,582
	50,000	122,591	410,582

According to this estimate, the production increases in proportion to the increase in the two larger provinces, and if this is maintained some forecast of the future output may be obtained. On the assumption that the population will become as dense as in Manitoba, it seems within the bounds of probability that a population of three millions may, within a decade or two, be found between the boundaries of Ontario and British Columbia. Assuming then that the local coal is mined as needed, there should be a maximum annual output of 2,600,000 tons of lignite and the cheaper grades of coal. The distribution of this amount, according to the needs of the respective areas, may be allotted as follows:—

	Tons.
Manitoba	150,000
Saskatchewan	1,650,000
Alberta	800,000
	2,600,000

As before remarked, Manitoba imports coal from the east and firewood from the north, while Alberta is partly supplied with a better grade of coal from the mountains.

Taking the character and value of these different coals into account, that from the Souris will supply about one-fourth of Saskatchewan and part of Manitoba, leaving three-fourths of Saskatchewan for the Alberta coals. This means that the output of the Souris mines may reach a maximum of 550,000 tons per annum.

The Alberta coal, to a maximum of 2,000,000 tons per annum, if distributed by railway lines eastward, might be adjusted under the following amounts:—

	Tons.
From Edmonton district	720,000
" Wetaskiwin district	350,000
" Lacombe district	400,000
" Kneehills and Crowfoot	350,000
" Medicine Hat	250,000
Totals from Alberta	2,070,000
Totals from Saskatchewan	550,000
	2,620,000

The main difficulty in keeping up with an increased demand is due to lack of transportation facilities, since, when coal is needed in the autumn, the railways are congested with wheat which has to be moved in the same direction as the coal. Another drawback is due to the apathy of dealers and consumers who neglect to store coal during the slack times, before the wheat shipments commence. This coal does not keep well unless stored in closed sheds, but if so treated, could be kept over summer. The loss of moisture causes the lumps to crack, so that if stored in a cool place, preferably below ground, in cellars for example, little evaporation can take place and the coal will not slack.

EXPLORATIONS ON THE CHURCHILL RIVER AND SOUTH INDIAN LAKE.

(William McInnes.)

INSTRUCTIONS.

My instructions for the past summer's work were to examine geologically and survey as much of the unexplored part of the Churchill river, including South Indian lake, as could be covered in the available time, to make certain geological examinations in the vicinity of Cumberland House, Saskatchewan, and to examine the reported mineral occurrences in the neighbourhood of Lac la Ronge, north of Prince Albert.

DESCRIPTION OF ROUTE FOLLOWED.

I left Prince Albert for Cumberland House by the Hudson's Bay Company's steamboat, on June 29. The water in the Saskatchewan river being high, little difficulty was experienced in navigating it, and we were able to follow the old channel to Cumberland, a course that can only be taken at very high water. This old channel formed, until about twenty-five years ago, the main course of the river, and is still to be preferred when the water is high enough to allow of its use. The new channel, which broke through at a time when the water in the main river was dammed back by an ice-jam, now takes more than half the water across to Sturgeon river and Cumberland lake, entering the lake by a number of small tortuous channels, none of which afford easy passage for steamboats. The water of Cumberland lake, excepting in the most northerly bays, is rendered quite murky by this sediment-laden inflow, the lake bottom is being gradually silted up and the fish, once plentiful, are being driven away. A dam at the point of outflow of the new channel would largely remedy these evils, and would be a great aid to the navigation of this part of the Saskatchewan river.

After a day at Cumberland House, the commonly used canoe route up Sturgeon-weir river was followed to Pelican narrows. Although the strength of the current makes poling or tracking necessary for a part of the way, and also occasional portages, the route, on the whole, is an easy one.

On Cumberland lake the banks were submerged in most places, and no outcrops of hard rocks were seen until Whitey narrows was reached, where low exposures of magnesian limestone, probably of Trenton age, outcrop. Other exposures of hard, yellowish-buff, magnesian limestone or dolomite, with dark brown thread-like markings and unidentifiable casts of brachiopodous shells, were seen on the shores of Namew lake. At a short rapid, a quarter of a mile above the junction of Goose and Sturgeon-weir rivers, yellowish-buff dolomites outcrop, very similar in general character to the upper beds exposed at Cormorant lake. The shores from this point to just below Amisk lake are made up of silt and clay, forming generally narrow ridges along the immediate banks, with low flat land behind.

Along the south-west shore of Amisk lake are almost continuous exposures of flat-lying or gently undulating, heavy bedded magnesian limestone, underlain by thin bedded dolomites. The more rapid disintegration of the lower, thin bedded strata causes the formation of cliffs that rise two or three chains back from the shore to heights of from 20 to 40 feet. These are often flanked with outstanding, detached, tower-like masses, while the intervening space is covered by a very rough talus of large, angular blocks from the cliff face.

The lithological resemblance of these rocks to those which, at Cormorant lake, hold Trenton fossils, and the fact that recognized Silurian forms have been detected only in the rocks at the southern end of Cumberland lake, leads to the belief that, all the sedimentaries north of the south shore of the lake should be included in the Trenton, the line of separation between them and the overlying Silurian probably traversing Cumberland lake in a nearly east and west direction just north of Cumberland House.

The cliff above referred to continues in a northerly direction up Sturgeon-weir river, forming the right bank of the stream as far as the first portage, while black and white biotite gneisses, nearly vertical in attitude, are exposed at intervals in low, rounded ledges, on the east bank. The same gneisses, the finer black predominating, cut by occasional sheet-like intrusions of coarse white biotite gneiss approaching a pegmatite in character with fairly uniform north-westerly dips, at angles varying from 45° to 80°, are exposed here and there along the river, to Pelican narrows.

At Heron lake, the next below Pelican narrows, Sturgeon-weir river was left and one of its tributaries ascended easterly through Waskwei and Attiti lakes, for a distance of about 30 miles to Kakinagamak lake. Thence Nemei river was followed for about 40 miles to the Churchill river, which it enters where the old Sturgeon House post of the Hudson's Bay Company was situated.

Biotite gneisses, striking generally north-westerly, form low ridges, occasionally partly sand-covered, between Heron lake and the divide. The forest growth is for the most part small, and the land rocky or sandy.

Kakinagamak lake has a length in a north and south direction of about 20 miles, lying in a narrow trough between low hills of gneiss. It empties northerly by a short stretch of river into Nemei lake and thence by a larger river course into Churchill river.

On Nemei lake and river the sand ridges are replaced by clay, which as the valley of the larger river is approached, covers the lower land between the gneiss ridges, to depths of from 20 to 30 feet.

Churchill River.

The Churchill river, from where Nemei river enters, to Pukkatawagan lake, is a succession of lake-like expansions connected by short stretches of swift water and rapids.

Banded, fine to medium-grained biotite gneisses, invaded by sill-like sheets and irregular masses of coarse white biotite gneiss, and by coarser pegmatites composed mainly of orthoclase feldspar and quartz, are well exposed at many points along the river. Their general strike swings to about east, with a northerly dip, at angles of from 40° to 70°, although showing minor crumpling. Certain bands in the finer gneiss are highly garnetiferous.

Pagato and Loon rivers, draining large lakes of the same names, enter the Churchhill river from the north, at the elbow where it turns eastward, directly north of Sisip lake.

From Pukkatawagan to South Indian lake (the lake of the Southern Indians) the river preserves its character as a chain of lakes, with short connecting links of rapids and falls. The land on either side as the river is descended becomes somewhat lower, and the islands and lower parts of the mainland are covered with a good mantle of light brown, friable clay, presenting considerable areas of good, cultivable land.

Biotite gneisses, similar in a general way to those occurring along the river above, are seen in the ridges or projecting from beneath the overlying clay, all along this part of the valley. Pegmatite intrusions are common, and the strata generally, although preserving in a broad way the same trend as above, are more contorted and crumpled. They include hornblende phases at a few points.

South Indian Lake.

A track survey checked by noon latitudes was made of the route followed from Pelican narrows to the entrance of South Indian lake, and a micrometer survey of the

lake itself. It was found to have a length of about 90 miles, an extreme width of about 15 miles, and owing to its deeply indented and irregular outline, a length of shore-line, disregarding bays and points of less extent than half a mile, exceeding 700 miles.

It is comparatively shallow and dotted with islands—the positions of 800 were approximately fixed—with areas varying from 25 square miles to quite small. The water of the lower half of the lake is turbid like the water of the Churchill river, while the upper part, above the outflow of the Churchill, is quite clear, like the water of the Muskwesi, a river of considerable size that empties into one of the northerly bays. About the southern end and the bays on the south-eastern side, the valleys, between low ridges of gneiss, are covered by a light brown friable lacustrine clay that is, with little doubt, continuous with that of the lower Burntwood River area and, like it, the result of deposition in ice-dammed, glacial waters. Adjoining the clay covered area on the north is a sand covered area, that apparently marks the rim of the old lake basin in which the lacustrine clays were laid down. The north end of the lake and the long bays on the west side extend into a flatter country, with less relief, where low ridges of gneiss, the flanks sparsely covered with sand, rise from extensive areas of black spruce and tamarack muskeg.

The rocks exposed about the lakes are for the most part banded biotite gneisses, varying in character from mica schists to granite gneisses and cut by numerous intrusives, including coarsely porphyritic red granites, fine red granites and pegmatites. These later rocks occur as intrusive masses of sometimes great extent, as sheets or sills, and as dikes or areas penetrating the gneisses. The gneisses, which are generally banded and stratiform in aspect, vary in dip from north-west to north-east and in angle from about vertical to horizontal, influenced largely by the intrusive masses that cut them. Fresh water-worn surfaces 4 feet above present high water level, on which the lichen and mosses are only beginning to grow, as well as accumulations of old drift wood, indicate an older high water level perhaps 50 years old, when the volume of water carried by the river was greater than now. The wide extent of smooth, clean rock surfaces that are thus exposed both on South Indian lake and along the Churchill river, offers a good opportunity for the study of the gneisses and associated rocks.

Upper part of Churchill River.

On the completion of the micrometer survey of South Indian lake, the Churchill river was ascended to the mouth of Nemei river and the track survey continued to Stanley, although for the portion above Frog portage a micrometer survey by Fawcett was available. The 60 mile stretch of river between the mouths of Nemei river and Reindeer river was the only bad piece of water encountered during the summer. In this distance a number of rapids and falls, including the Wintego, a rather bad, crooked rapid at the foot of Wintego lake, make eleven portages necessary and the ascent of the river somewhat tedious. For the whole distance of 70 miles intervening between Reindeer river and Stanley, the lake-like character of river channel before described is repeated. The shores are generally rocky, with here and there a thin cover of sand and gravel or sandy clay. At Frog portage the waters of the Churchill overflow to the south in a stream of considerable volume—large enough for the passage of York boats, excepting at the rapids—and make their way by Pelican narrows and Sturgeon river to the Saskatchewan river at Cumberland.

Between Nemei river and Stanley, with the exception of a few exposures of quartzose mica schist at Grand and Key rapids, that are possibly highly altered phases of Keewatin rocks, occurring as infolded bands in the gneisses, all the rocks exposed are biotite gneisses, varying from coarse to quite fine and schist-like.

Lac la Ronge.

From Stanley the route by Three Portage brook was followed to Lac la Ronge. Fine black and coarser, white biotite gneisses with narrow bands, never more than a few chains wide, of highly altered chloritic mica schists, and quartz schists occur all along the route to the lake and down its shores to near the southern end, where sand and boulders, without exposures of hard rock form the shores. The narrow schistose bands are probably infolded, highly metamorphosed Keewatin rocks, and possibly represent the tapering ends of a broader belt of these rocks, projecting from beneath the sedimentaries that overlie the country to the south.

The schist bands have been extensively squeezed and crushed and are, to a greater or less extent, impregnated with sulphides of iron and copper, the former often in considerable quantity, but the latter as far as observed, in comparatively small quantities.

On these bands, that in places weather to a gossan almost, numerous mineral claims were located during the summer; at Long point, near Moose portage, on a large island in Sucker bay known as Mineral island, and on a number of smaller islands.

With the exception of a few shots on some of the ledges, no work had been done on any of the properties at the time of my visit, and their probable value could be judged only from surface indications. The assays detailed below were of specimens collected, in the absence of prospectors or claim owners to act as guides to their properties, from locations on the lake shores, and thought to represent average samples from some of those showing the best surface indications.

1. Locality—Long point, Lac la Ronge, Sask.
   Gold.. .. .. Nil.
   Nickel.. .. .. Trace.
2. Locality—Mineral island, Lac la Ronge, Sask.
   Gold.. .. .. Nil.
3. Locality—Mineral island, Lac la Ronge, Sask.
   Gold.. .. .. Nil.
   Nickel.. .. .. Trace.

These results are, to say the least, not encouraging. No assays were made of material from the copper claims, as chalcopyrite was not seen in sufficient quantity on any of them to be economically promising.

Country south of Lac la Ronge.

Time did not permit of a further examination of the country to the south of Lac la Ronge, and the route followed to Prince Albert by way of Montreal river and lake afforded no exposures. It seems probable, however, from the occurrence at a number of places on the south shore of Lac la Ronge of beaches and points made up almost exclusively of angular debris of a yellowish, hard, magnesian limestone, and the absence of exposures of other rocks *in situ,* that a rim of Trenton rocks is in place beneath the drift deposits. The undoubted occurrence of outcrops of lignite coal on some of the streams flowing into the southern end of the lake indicates that the overlapping edge of the Cretaceous is at no great distance south from the lake shore.

ECONOMIC GEOLOGY.

With the possible exception of the mineral occurrences in the neighbourhood of Lac la Ronge, referred to on another page, and of lignite coals in the Cretaceous rocks south of that lake, no minerals of commercial importance are known to occur in economic quantities in the area covered this summer.

I was shown specimens in the possession of Indians at Pukkatawagan lake, of gray copper and molybdenite, that they claimed, probably with truth, were found at points not far from the main Churchill river.

On the east shore of South Indian lake a large, angular boulder of impure hematite ore was found. Although certainly not derived from the rocks in its immediate

neighbourhood, it is of interest from the fact that it is improbable that a large angular block of ore would be carried for a very long distance from its point of origin.

GLACIAL GEOLOGY.

Evidences of glacial action in the form of polished and striated rock surfaces, erratics and morainic and other accumulations of ice borne material, are well displayed over most of the region.

Striae all about South Indian lake are very well marked, showing ice movement in two principal directions, viz., S. 48° W. and S. 64°, with many deviations as much as 10° from each of these directions.

FORESTS.

The forest growth is not large anywhere in the region traversed, although the occurrence of white spruce of good size in small stands and as scattered single trees, indicates that if forest fires could be prevented the valleys, at least, would support a valuable growth of white spruce.

The higher land and the greater part of the valleys now show only second growth forest from 60 years to only a few years old. Aspen and Banksian pine are the most numerous among the trees gorwing up, but white birch, the three varieties of spruce, and balsam poplar are included.

FISH AND GAME.

Sturgeon, whitefish, doré and pike are plentiful in the larger lakes and streams throughout the district, the two first named being particularly large and fine in the Churchill where, however, the distribution of sturgeon is confined to the waters east of Kettle fall. Lake trout were caught in Lac la Ronge and Attiti lake, and are known to occur in many other clear water lakes in the region.

Moose are fairly plentiful in the country north of Cumberland, between the Saskatchewan and Churchill rivers, also along the last-named river to about the southern end of South Indian lake, and are particularly abundant in the low land bordering the Montreal river. Wapiti are found in considerable numbers to the south of Montreal lake, and woodland caribou in the northern part of the moose country. Barren ground caribou in their winter migration cross South Indian lake in large herds, leaving it at a point about three-quarters down its western side, travelling towards Reindeer lake. Jumping deer have been reported recently in the country immediately north of Cumberland.

ARABLE LANDS.

The lacustrine clays that cover a large part of the region lying between the head of Pukkatawagan lake and the outlet of South Indian lake form practically the only cultivable soils in the area. They are well developed on the long bay extending southerly from South Indian lake towards Burntwood river, and probably cover a large part of the country lying between the Churchill and the lower Burntwood river.

Many large tracts along the Churchill lying within the clay area are apparently well adapted for settlement. At Pukkatawagan lake, where the Indians have a few log houses, small fields of potatoes are cultivated, and on September 3 excellent potatoes were obtained from the Indians at that place. Barley, I was informed, had been successfully grown there. At Stanley, which was established in 1851, and abandoned in 1893, as a principal district post of the Hudson's Bay Company, a cleared flat of clay land was once cultivated, and grain of various sorts successfully grown. In the garden now maintained most of the common garden vegetables as well as potatoes were growing on September 16, and no frost had been experienced up to that time.

Outside of the lacustrine clay basin most of the land is either rocky or too sandy to be attractive, excepting that extending from Montreal lake to the Saskatchewan, where are large areas of alternating heavy clay and light, sandy clay well adapted for cultivation.

Mr. Chester P. Brown, a student in science at Toronto University, who acted as my assistant in 1897, filled the same position during the past season. His work was satisfactory in all respects.

Additional samples from the Lac la Ronge district were received during the winter from the Board of Trade, Prince Albert, through the Bureau of Information and Statistics, Department of Agriculture, Regina.

Assays of these gave the following results:—

(1) Pyrrhotite—	
Gold	0·08 oz. per ton
Silver	0·35 oz. per ton
(2) Chalcopyrite—	
Copper	8·10 per cent
Gold	trace
Silver	0·25 oz. per ton
(3) Chalcopyrite—	
Copper	8·50 per cent
Gold	trace
Silver	trace

The above assays, it will be observed, give results quite in accord with the earlier ones published in this report.

The results of the assay of a sample of crushed pyrite received from the same source as the above, are not given, as the Department makes it a rule, in cases of this kind, not to deal with crushed or concentrated samples, but only with those received in their original condition.

SURVEY OF THE SOUTH COAST OF HUDSON BAY FROM THE SEVERN RIVER TO CAPE HENRIETTA MARIA.

(Owen O'Sullivan.)

ROUTE TRAVERSED.

On May 23 I left Ottawa for Winnipeg, where I secured the services of Mr. Jos. de Lorimier, who was with me in 1905. I took passage on the steamer *Premier,* from Selkirk to Warrens landing, reaching Norway House by the Hudson's Bay Company's tug, on June 5.

At Norway House I engaged two canoemen for the whole trip, and on June 9, left with three canoes and seven men for York Factory, via the Nelson and Hayes rivers. We arrived at York Factory on June 27, and here learned that the ice of Hudson bay was still fast to the shore, making the navigation of the coast impossible, even with canoes. Upon the advice of Mr. Learmouth, the gentleman in charge of York Factory, we proceeded to Severn post by an inland route, leaving York Factory on July 1. We accordingly went up Hayes, Shamattawa and Sturgeon rivers, through Sturgeon lake, and, following a small creek, arrived at a portage about 2 miles long, which brought us to Castorum river, a branch of the Severn. Following the Severn downwards, we arrived at Severn post on July 16, after a journey of over 300 miles. A track survey was made of the route.

On July 18, we resumed our survey eastward to Cape Henrietta Maria, arriving there on September 12, after traversing a distance of over 300 miles.

This summer's work completes a continuous survey of the coast from Point Comfort, on the south shore of James bay, to York Factory on the west coast of Hudson bay, a distance of nearly 1,000 miles. The whole of this survey was made by myself with the same micrometer, under the same conditions, and was checked by astronomical observations.

PHYSICAL FEATURES.

Only two rivers of any importance flow into this part of Hudson bay. The Winisk, at the 125th mile from Severn post, is the larger of the two. It was surveyed and reported on by Mr. McInnes in 1903. The other, Trout river, enters the bay 200 miles from Severn post. This stream was surveyed and reported on by Messrs. Dowling and Boyd in 1901. The mouths of both of these rivers are quite shallow. The Winisk has a main channel, but the Trout river widens to a shallow estuary on entering the bay. There are several other streams flowing into Hudson bay, principally between the Severn and Trout rivers, but they all could be waded at half tide.

The coast between the Severn and Cape Henrietta Maria is of very much the same character as between the Severn and York Factory. The high tide line, which I attempted to follow, runs from Severn post eastward with but few irregularities for a distance of 230 miles. From there it is broken by points of limestone running out to sea in a north-easterly direction, and forming bays and points at intervals along the coast to Cape Henrietta Maria. The shore is low and flat, and in places the tide runs out a distance of 4 miles, leaving mud flats with many exposed boulders. There are many of these boulders between the Severn and Winisk, and they become still more numerous as one goes eastward to Cape Lookout, 184 miles from Severn post. Beyond Cape Lookout to Cape Henrietta Maria, many irregular reefs of boulders were observed reaching nearly to high tide water, and running out to sea as far as the eye could reach.

Between high tide and tree line, old beaches made up of sand and gravel running nearly parallel to the present high tide line, were noted. These ridges are more regular in the first 200 miles than in the last 100 miles. They sometimes run for a distance of 5 or 6 miles without interruption. As a rule they are about one or two chains wide, with an elevation of from 1 to 10 feet above high tide. Generally four prominent ridges could be seen between high tide and tree line. Dry mud flats, grassy flats, salt marshes and fresh-water ponds or lakes occupy the spaces between these ridges, which run parallel with one another at distances of from a few yards to over a mile.

FLORA AND FAUNA.

The country inland appears to be swampy and moss-covered. It is thinly wooded with low black spruce and tamarack having an average diameter of about 5 inches. In the first hundred miles from Severn post, the tree line is from 1 to 3 miles from high water mark. It then takes a south-easterly direction to the Opinnagan river, flowing into James bay, leaving the area northward to Cape Henrietta Maria open, barren and moss-covered, with numerous fresh-water lakes and ponds, the largest lake seen measuring about 3 miles long by 2 wide.

The trees come closer to the coast at the mouth of the Winisk and Trout rivers. A black spruce bluff was noted opposite a place 165 miles from Severn post. A fringe of willows and juniper bushes was generally found before reaching the tree line.

Ducks in thousands were seen late in August. The most common were pintails, teals and mallards.

ICE.

From July 21 to September 12, floating ice was constantly in sight. Large fields of ice could always be seen at about 3 or 4 miles from high tide. This ice was driven inshore by strong north winds during August and September. On two occasions, August 26 and September 8, it was necessary to portage outfit and canoes on account of the ice being shoved up on reefs near high tide mark, and on the first of these occasions, one stranded block was seen having a thickness of over 10 feet.

RETURN JOURNEY.

Our homeward trip was made southward, via James bay. We arrived at Fort Albany on October 1, and left on October 5, following the Albany river up to a point where the English river joins. We went up this branch as far as Long lake. Leaving Long lake on October 29, we crossed over to the head of the Pic river. During the night of October 29, a severe frost froze all the small lakes and still water of the stream, but by breaking the ice it was still possible to continue the journey. Another frost on November 7, however, rendered further canoeing impossible. Heron bay, on the Canadian Pacific railway, was reached on November 11.

THE REGION IN THE VICINITY OF LAKE NIPIGON, THUNDER BAY DISTRICT, ONTARIO.

(Alfred W. G. Wilson.)

In accordance with instructions received in May last, the writer, assisted by Mr. Robert Harvie, jr., has been engaged in obtaining information required to complete the two standard map sheets which cover the area in the vicinity of Lake Nipigon, District of Thunder bay, Ontario. We were occupied in field work from the first of June until the end of October. During the first portion of the season Mr. Harvie and the writer worked together in making a micrometer survey of the Blackwater and Sturgeon rivers to the east of Lake Nipigon. During about half the period devoted to the field work Mr. Harvie was employed on general mapping in parts of the area, while the writer was engaged on similar work in other parts for the same map sheets.

Only a small portion of our time had to be devoted to strictly topographic work, this information having already been compiled from the work of members of the Geological Survey staff in previous years, and from the various land surveys and railroad surveys that have traversed the district in all directions. Because of the extent of these surveys we were able to pay closer attention than usual to the geological mapping, and in the prosecution of this work we made numerous sections into the hitherto unexplored areas lying between the courses of the principal streams tributary to Lake Nipigon. The data which we have obtained will enable us to compile both these map sheets with very considerable detail.

The work of the summer was largely a review, compilation and extension of the previous work of members of the staff, including the present writer, in 1901, in the same field, and while it has resulted in an increased knowledge of the detailed geology there are few additional data of economic importance to be noted here.

In the south-west quarter of the area, between Black Sturgeon lake and Nonwatin lake, when the writer visited the locality in 1901, there was said to be an iron range of considerable extent, and during that and the succeeding season numerous claims were located along the supposed range. The results of the detailed examination made this summer, largely the work of Mr. Harvie, show that there is no iron range in the sense in which that expression is generally used. On many of the claims specular hematite occurs in small, more or less ramifying veins in a granite and in a schist, the hematite being very pure. It occurs also as a cement between the fragments of a breccia, these fragments being either granite or schists. The exposures showing ore occur along a north-west and south-east line running between Nonwatin and Black Sturgeon lakes, at the foot of a strong escarpment. There are reasons for believing that this escarpment represents an old fault line, the cemented breccias being fault breccias which have subsequently become impregnated with the pure hematite by infiltration. We saw no large masses of ore, the several diamond drill holes that have been put down on some of the properties do not seem to have disclosed any large bodies of the hematite, and I feel justified in stating that the geological conditions are such that it is extremely improbable that any bodies of ore of commercial importance occur in this locality, at any rate none have been discovered.

With reference to the iron ranges at Poplar Lodge and east of it, on the east shore of Lake Nipigon, they were partially investigated by several mining corporations between the years 1901 and 1903; during the seasons of 1906 and 1907 detailed geological studies were made for the Ontario Bureau of Mines by Dr. A. P. Coleman and his assistants. Under the circumstances we did not consider it either necessary or

advisable to attempt to make further examinations of the ranges, since the time could be more profitably employed elsewhere.

In the northern part of the area, in the vicinity of Round lake on the Mud river, about 6 miles north of the location of the National Transcontinental railway, other iron ranges are said to occur. As this district was being explored in detail by Mr. S. E. Moore, for the Bureau of Mines, during the present season, we did not attempt to do additional work in the area.

North-west of Lake Nipigon, in the north-west corner of the area under review, extending beyond the boundaries of the present map sheets, and including also practically all the country between the Mud river and Caribou lake, is a large area of Keewatin rocks that appear to the writer as possibly worthy of the attention of prospectors. No minerals of economic importance were found in the locality by us. In 1906 Mr. Collins noted the occurrence of some very small areas of iron ore in the vicinity of Caribou lake which are not of economic importance.[1]

We also noted some very narrow patches of a conglomerate that may probably represent the Upper Huronian conglomerate of the Poplar Lodge iron ranges. Other basic rocks similar to those at Poplar Lodge occur east of Caribou lake, and small patches of diabase, so widely distributed in the areas east of Port Arthur are also found here. While the results of the exploration of the two localities in which hematite has been found in the Lake Nipigon district have been largely of a negative character, and while this third area, still unexplored by the prospector, seems to be of very similar nature, its true value cannot be known until further work has been done.

Prospectors informed us that some finds of a nickel-bearing pyrrhotite had been made to the north-east of Lake Nipigon, not far from Marshall lake, but no specimens were submitted for examination and we were not able to confirm the information.

[1] W. H. Collins, Report on a portion of North-western Ontario traversed by the National Transcontinental railway, Geological Survey, 1908. No. 992, p. 21.

SIMCOE SHEET, ONTARIO.

(W. A. Johnston.)

During the past field season the topographical and geological mapping of the Simcoe sheet was continued according to instructions.

FIELD WORK.

On June 22, I proceeded to Orillia, Ont., where I was joined by Jas. Hill, M.A., B.Sc., of Stratford, Ont., Bert. A. MacKay, of Cornwall, Ont., and R. L. Junkin, of Toronto, who acted as my assistants during the season's work, which lasted until October 26.

While the mapping of the Simcoe sheet was being carried on by my assistants, I spent about seven weeks in midsummer with Mr. F. B. Taylor and Dr. Goldthwait, in leveling the Algonquin and Nipissing beaches in Ontario, and in studying the drift deposits of south-eastern Ontario.

The topographical work on the Simcoe sheet has been extended to the west side of Lake Simcoe, and during the past season portions of the townships of Mara, Rama, North and South Orillia, Oro and Vespra were mapped. In connexion with this work transit and chain lines were run along the railways, forming a basis of control for road traverses, which were made by compass and odometer. Instrumental levels were taken over all the roads traversed and contours at intervals of 25 feet put in. The precise levels taken by the Department of Public Works in connexion with the Georgian Bay Ship Canal survey along several railways in the Simcoe district, form an excellent basis for our levels.

GENERAL GEOLOGY.

One of the most important points in connexion with the geology of this part of Ontario is the determination of the age of the basal members of the Palæozoic series of limestones, shales and sandstones, which rest unconformably upon the Pre-Cambrian rocks. This has been a matter of dispute and uncertainty ever since the first work of the "Survey," in 1852, by Mr. Alexander Murray, in the district lying between Kingston and Lake Simcoe.

Mr. Murray describing the section of Marmora, Ont., which is similar to the section at Langford noted below, says:[1] The upper beds of the previous section are evidently part of the Birdseye formation, but in what part of the 80 feet to draw a line as its base, it is not easy to say.

The lowest fourth of the section is supposed to belong to the Calciferous sand rock, and it may be the case that the second quarter, including the beds marked by the intersecting lenticular crystals of calcspar, may belong to the Chazy, but there is as yet no satisfactory way of proving it."

Regarding the same section it was later stated:[2] 'In this section there appears to be such a passage from the arenaceous beds at the bottom of the compact limestones which become fossiliferous at the top, as to induce the supposition that the whole belong to the formation named (Birdseye and Black River), notwithstanding the two Chazy species found at Vanluvins Mills.' The section at Vanluvins Mills is also described and a list of fossils from the lower portion of the section is given, regarding

1 Report of Progress, Geological Survey, 1852-3.
2 Geology of Canada, 1863, p. 182.

which the following statement is made:[1] 'Leperditia Canadensis ranges from the Chazy into the Birdseye and Black River, but the presence of *Pleurolomaria pauper* and *Bathyurus Angelini*, in the upper portion might lead us to refer this to the Chazy, notwithstanding the occurrence of *Tetradium fibratum*, which has not hitherto, in other places, been found lower than the Birdseye and Black River formations; unless indeed some of the perforations taken for *Scolithus*, in the Potsdam, be not rather impressions of that fossil.'

On the Madoc map sheet prepared by Mr. Eugene Coste, in 1886, the lowest Palæozoic sediments are mapped as Birdseye and Black River, but later[2] Mr. Coste refers the basal arenaceous beds to the Calciferous. On the Bancroft map sheet (1905) outliers of similar character are referred to the Black River.

Wilson and Graham[3] regard the sandstone at the base of the limestones in central Ontario, west of the Frontenac axis, as the basal arenaceous member of the Lower Black River.

Throughout this area the limestones dip gently to the south or south-west, away from the old land to the north, and generally present a steep escarpment at or near their contact with the Pre-Cambrian crystalline rocks. This escarpment varies from a few feet to upwards of a hundred feet in height, and can be traced more or less continuously all the way from Kingston to Georgian bay. Numerous quarries have, of late years, been opened along this escarpment, affording good sections of the limestone, shales, etc., from the base of the Trenton down to the Pre-Cambrian.

The Trenton limestones, generally consisting of thin-bedded, blue to black, somewhat shaly and nodular limestones, everywhere abounding in fossils, underlie the greater portion of the district. They pass downward into the limestone of the Black River formation. This formation, although only about 20 feet in thickness, is remarkably continuous and uniform in character, both lithologically and palæontologically. It consists of massive dark coloured limestone, containing a great abundance of characteristic large fossils, such as *Columnaria Halli, Stromatocerium rugosum*, etc., and forms an easily recognizable horizon. These coral beds form what is understood to be the Black River formation proper, that is, not including the Birdseye. The Black River beds are evidently continuous across the Frontenac axis from the Ottawa basin to the western or Ontario basin, except where they have been removed by erosion. In the Ottawa basin, a bed of fine-grained, dove-coloured limestone a few feet thick at the base of the Black River proper, is not sharply delimited from the Black River above nor the Chazy below, and for this reason, though formerly referred to the Birdseye, it was later included in the Black River, and the term Birdseye dropped altogether. Mr. Walter R. Billings of Ottawa still holds, however, that these beds should be referred to the Birdseye.[4]

West of the Frontenac axis, the dove-coloured limestones attain a considerable thickness and show a marked contrast, both lithologically and palæontologically, to the overlying Black River strata. In the district lying between and to the north of Lake Simcoe and Balsam lake, the Black River limestone has been eroded, exposing the underlying beds; hence, in the areal mapping of the district, the determination of the age of these local limestones, shales, etc., becomes more important.

In the last Summary Report these beds were doubtfully referred to the Birdseye (Lowville) and were thought to represent a formation deposited in Upper Chazy time, but in a basin separated from the Ottawa basin by a land barrier at the Frontenac axis. Further interest has been created in this subject and considerable light thrown upon it by the work during the past year of Messrs, Cushing, Ulrich and Ruedemann,

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1 Geology of Canada, pp. 177-178.
2 Report of Bureau of Mines, Ontario, 1906.
3 Canadian Record of Science, Vol. IX., p. 132, Bulletin Geological Society of America, Vol. XVII., p. 584.
4 Ottawa Naturalist, Sep., 1908.

in the north-western portion of New York state, a district also lying to the west and south of the Frontenac axis, where apparently similar formations are exposed.[1]

In north-western New York, according to Mr. Cushing,[2] the first formation below the Black River is the Lowville (Birdseye), having a thickness of 60 to 75 feet, and consisting of blue or dove-coloured fine grained limestone, with beds of thin, shaly limestones, which constitute nearly one-third of the formation. Regarding this formation he says:[3] 'The Lowville limestone, while typically developed on the south and west sides of the region, is but thinly developed in the Champlain valley, and is not sharply delimited from the formation above or below, as in the Mohawk and Black River valleys.'

Below this comes a closely related formation which Mr. Cushing has provisionally named the Pamelia. It consists of[4] 'blue and dove limestone, with intercalated magnesian limestones, and in the upper half of the formation, much whitish, impure limestone, and some yellow water-lime; a thin basal sandstone and overlying shales,' and has a thickness of from 40 to 140 feet.

Regarding this formation he says:[5] 'The Pamelia represents a formation deposited in Chazy time, but in a wholly separate basin.' He regards it as equivalent to the whole or a part of the upper division of the Stones River formation of the western basin. Beneath this formation and separated from it by an unconformity, both by erosion and overlap, lies the Theresa formation, supposed to be equivalent to the lower portion of the Beekmantown (Calciferous), and the Potsdam sandstone forms the base of the series. The maximum thickness of the formations below the Black River in north-western New York, as given by Mr. Cushing, is 375 feet, whereas in central Ontario the greatest thickness of the series below the Black River, seen in any of the sections, is only about 80 feet.

At the Longford quarries on the west side of Lake St. John, in Rama township, county of Ontario, a very good section is exposed. The north and east sides of the lake are occupied by the Pre-Cambrian granites and gneisses. Along the west side, an escarpment in the limestone is developed, in the face of which a number of quarries have been opened. The beds exposed along the shore have a slight dip towards the south-west, but near their contact with the crystalline rocks, are tilted up at a high angle and are apparently faulted, while the actual contact is concealed by drift. In the quarries, about 4 feet of the Black River limestone are exposed at the top in two heavy beds, containing an abundance of the characteristic fossils of the Black River, such as *Columnaria Halli, Stromatocerium rugosum,* etc., and a 6″ bed at the bottom is a mass of *Tetradium fibratum.* Below this are 12 feet of fine-grained blue and dove-coloured limestone, containing great numbers of *Leperditia,* but comparatively few other fossils.

These beds become somewhat shaly and impure toward the base, and weather white. Below these are about 30 feet of impure magnesian limestones, weathering brownish to pink, interbedded towards the base with thin-bedded blue to dove-coloured fossiliferous limestones. The base of the series, seen a short distance to the north-west of this locality, consists of about 20 feet of red and green, calcareous and arenaceous shales, with a few feet of coarse sandstone or arkose resting on the eroded surface of the Pre-Cambrian.

No breaks have been detected in any of the sections in central Ontario, and the whole series of formations from the Trenton down appear to be perfectly conformable.

It is possible that the thinned shoreward edges of some of the formations found below the Black River by Mr. Cushing, in north-western New York, are represented in this section, and that the true solution of the difficulty which has been experienced

1 Bulletin of the Geological Society of America, Vol. XIX., pp. 155-176.
2 Op. cit., p. 159.
3 Op. cit., p. 172.
4 Op. cit., p. 159.
5 Op. cit., p. 172.

in determining the age of these limestones, etc., in Ontario, in the absence of definite fossil evidence, is found in the assumption that they were laid down in a basin, separated from the Ottawa basin by a land barrier, at or near the Frontenac Pre-Cambrian axis. If this is so, the limestones, etc., below the Black River in central Ontario should be more easily correlated with the formations of the western basin.

A number of fossils have been obtained from the limestones towards the base of the section above-mentioned, which have not been determined, and until this is done nothing definite can be said regarding their age. It is probable, however, that neither the Calciferous (Beekmantown) nor Potsdam, are represented in the district at all, as there is no sign of any unconformity at the base of the limestone and the basal sandstone, or arkose, is always local in character and distribution, while occasionally beds of pure limestone, similar to the limestones higher up, are interbedded with the arenaceous beds down to the very base of the series.

The critical locality with regard to the question as to whether a land barrier existed separating the Ottawa basin from the western basin during the deposition of the sediments prior to the Black River is the Brockville-Kingston area, which has long been known as the Frontenac axis. This district has been described by Mr. Ells in the Summary Report for 1901, and later in a second paper[1] where he notes the difference between the relative succession of the several formations between the Potsdam and the Black River, on the two sides of the Frontenac axis. Regarding the limestone series about Kingston, on the west and south side of the axis, he says: 'Unless it is possible to correlate the lower 100 feet of this limestone series with the Chazy of the Ottawa basin it is necessary to extend the Black River formation downward to a very much greater thickness than is found anywhere else in eastern Ontario, since the true Black River strata, with the characteristic fossils of the Ottawa River basin, occupy only the upper portion of the formation.' Limestones similar to those found at Kingston occur beneath the Black River, throughout central Ontario, but so far as known no typical Chazy fossils have been obtained from them, hence the difficulty of referring them directly to the Chazy. The alternative seems to be to assume that these limestones, if they belong to a separate formation, were laid down in a separate basin and represent the shoreward edge of a formation of the south-western basin.

A few miles up the Rideau from Kingston Mills, a considerable thickness of sandstone, which is apparently conformably overlaid by Black River limestone, is exposed. This sandstone is regarded by Mr. Ells as Potsdam in age, representing the western extension of the Potsdam-Calciferous area of the Ottawa basin, since he states[2] that the sandstone has been traced by numerous outcrops up the Rideau to Westport, at the summit level of the canal, where it passes upward through the Calciferous and Chazy formations into the Black River limestone. If the sandstone exposed along the Rideau above Kingston Mills is Potsdam in age, the conformity with the overlying Black River limestone is only an apparent one as both the Chazy and Calciferous are lacking near Kingston Mills.

On the above supposition the Frontenac axis must have been affected by differential elevation during Cambro-Silurian time, and this is also borne out by the peculiarities of deposition in the Kingston district, by which at the same level and apparently in the same basin, different formations were laid down. Regarding this Mr. R. W. Ells says:[3] 'It would seem that in this portion of the Province of Ontario, as also in a part of the strata of New York adjacent on the east, the regular sequence of these formations has been affected by causes not directly observable at the present time, by which certain members of the geological scale have been omitted. Such gaps have not been caused by faulting, but are due rather to local differences in elevation which have affected certain portions of the area in question, since practically on the same

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1 'Notes on some interesting rock contacts in the Kingston district,' Trans Royal Society of Canada, 1903.

2 Op. cit.

3 Op. cit.

present general level, and within a comparatively limited space, we find different formations ranging from the Potsdam to the Black River, constituting the lowest beds which rest upon the Archaean floor.'

The base of the limestone series at Kingston and westward throughout central Ontario appears to be everywhere similar in character, consisting of sandy and calcareous shales and grit or arkose, generally quite thin and rarely more than a few feet in thickness. In the Simcoe district the shales have a thickness of 20 feet, and seem to show the gradual thickening westward of the lower part of the formation. The logs of numerous borings made in Ontario, show the occurrence of similar sandstone or arkose at the base of the column. For example, in borings at Belleville there was reported to be found at the base immediately above the Archaean, a thickness of 4 to 8 feet of sandstone or arkose; at Whitby. 8 feet; at Toronto, 10 to 20 feet; at St. Catharines, 27 feet; in Peel township, Wellington county, 51 feet; and in Osprey township, Grey county, 47 feet. The coarse conglomerate commonly found at the base of the Potsdam in the Ottawa basin is almost entirely wanting, and the sandstone differs from the Potsdam in that it is always more or less calcareous.

It would therefore appear to be possible that the area lying to the south and west of Kingston was above the sea during or prior to the time of deposition of the sandstone of the Rideau district, and formed a land barrier shutting off the waters of the south-western sea from those of the Ottawa basin, until by its gradual subsidence the encroaching waters deposited the sandstones, shales and limestones found below the Black River in the Ontario basin. Not until Black River time was the submergence complete and the limestones laid down continuously across the Frontenac axis. If this was the case the limestones, etc., below the Black River in the Ontario basin should be the near shore equivalent of either the Lowville (Birdseye) or Stones River of the western basin, and a comparison of their respective fossils should determine this.

To recapitulate: While in the Champlain valley the Lower Palæozoic measures form a complete unbroken series from the Potsdam to the Trenton, in the Ottawa basin the formations from the Chazy to the Trenton have been described as following one another conformably and without a break, though by some the Lowville (Birdseye) is not recognized. The Black River and the immediately underlying few feet of dove-coloured limestone, extend from the Ottawa basin across the Frontenac axis into western Ontario, where they pass down into an assemblage of beds quite unlike those east of the axis and whose age is in question. These lower beds in the western basin rest directly on the Pre-Cambrian. In north-western New York state, in a district also west of the Pre-Cambrian axis, the Potsdam is succeeded by the Theresa formation of Lower Beekmantown age, then comes a break unrecognized in Ontario, above which appears the Pamelia of Chazy age, grading up into the Lowville, in its turn followed by the Black River.

ECONOMIC GEOLOGY.

In the northern portion of the Simcoe district there are numerous exposures of the magnesian limestones of the lower portion of the series. One of the best localities is on the south side of Lake St. John, in Rama township, where the beds have only a thin covering of drift over them. Some inquiries have been made regarding magnesian limestones in that portion of Ontario, but it is doubtful if these beds are sufficiently pure for the purposes required. Over the greater portion of the district, however, there is a heavy mantle of drift. Especially is this the case on the west side of Lake Simcoe, where the drift hills rise to a height of 500 to 600 feet above the lake, and no exposures of hard rock occur.

PLEISTOCENE GEOLOGY.

One of the most interesting points in connexion with the Pleistocene geology of the district is the Algonquin beach, which has now been traced almost continuously on both sides of Lake Simcoe for over 50 miles and accurately mapped and leveled.

The leveling has confirmed beyond a doubt, the uplift of this beach towards the north-east. The area covered so far in the Simcoe district has been too small to attempt any general description of the drift deposits of the district.

APPENDIX.

Since going to press a list of the fossils which were collected by the writer from the above-mentioned quarries at Longford, Ont., and from the vicinity of Uphill, Ont., and sent to Mr. E. O. Ulrich, of the United States Geological Survey, has been received. The following is the list of fossils as determined by Mr. Ulrich:—

FOSSILS FROM BED I.

Rafinesquina minnesotensis, Winchell.
Strophomena filitexta, var. (Lowville var).
Crytodonta sp. undet.
Liospira progne, Billings.
Liospira vitruvia, Billings.
Leperditia fabulites, Conrad.
Isochilina armata, Walcott.

FOSSILS FROM BED II.

Tetradium cellulosum, Hall.
Phytopsis tubulosum, Hall.
Strophomena cf. filitexta.
Gyronema sp. undet.
Leperditia fabulites, var.
Isochilina armata, Walcott.
Bathyurus extans, Hall.
Bathyurus spiniger, Hall.

The fossils from bed I were collected from the lowest fossiliferous limestones as described in the above-mentioned section at the Longford quarries, and the fossils from bed II were collected from the fine-grained, dove-coloured limestones immediately underlying the dark-coloured, heavy beds at the top of the section, which latter beds have been referred to the Black River limestone.

Mr. Ulrich states (letter March 9, 1909), that these fossils are all of Lowville (Birdseye) species. With regard to the shales, arkose, etc., at the base of the section, he says: 'What the basal 20 feet of red and green shales, thin sandstones, and arkose may be I do not like to decide at this distance from the outcrop. I strongly suspect, however, this variable bed is merely the initial deposit of the Lowville. Just such sediments are to be expected whether it is the Lowville or the Pamelia that first overlaps the old Pre-Cambrian land.'

FIELD WORK ON THE PLEISTOCENE DEPOSITS OF SOUTH-WESTERN ONTARIO.

(F. B. Taylor.)

On account of previous arrangements for other work only a part of the season was available for this investigation. Work was begun at Sarnia on July 4, and closed at Grimsby on September 30, 1908.

WORK OF THE LEVELING PARTY.

Five weeks (July 7 to August 11, inclusive) were spent in leveling with a wye level the Algonquin and lower beaches, chiefly along the border of Lake Huron, the south side of Georgian bay, and around Lake Simcoe and Balsam lake. The work was done under my direction by Prof. J. W. Goldthwait, of Dartmouth University, Han over, N.H., with Mr. Roy C. Jacobson, of Geneseo, Ill., as assistant. Mr. W. A Johnston of the Canadian Geological Survey joined me in the field work on July 12 and remained until about the middle of September.

In the leveling work lines were run from the Algonquin beach to the present lake shore wherever that was within reach, otherwise to some other datum of known, accurately determined altitude. Lines were run at intervals of 5 to 10 miles where possible, but in some places, as around Kirkfield, at much shorter intervals. Prof. Goldthwait's summary report on the leveling is appended.

OBSERVATIONAL STUDIES DURING THE LEVELING.

During the leveling operations as much time as could be taken from that work was given to the study and mapping of the Pleistocene features of the region traversed by the party. In this Mr. Johnston joined, and a large amount of information was gathered, but it is somewhat fragmentary, owing to the fact that observational work was for the time subsidiary to the leveling.

The chief studies related to the character, strength, variations, etc., of the Algonquin and Nipissing beaches. These two beaches are the greatest old shore lines of the region studied. As far as Kirkfield the Algonquin beach is a magnificent feature, but in the broken, thinly drift covered and forested Archaean region to the north, it is much harder to follow.

Lake Algonquin had its outlet east of Kirkfield into Balsam lake, and thence down the Trent river. In his later writings Dr. J. W. Spencer has thrown some doubt upon the existence of this outlet, although he had pointed it out at an earlier time. I spent some time studying the region of the outlet, in October, 1907, and it was studied again this season. Not only was it proved that there was a great outlet here, but much evidence was found showing that it endured for a relatively long time. The Algonquin beach keeps a remarkable degree of strength far into the outlet head, among islands and crooked channel ways where wave action must have been greatly reduced. It could not have been formed in such strength in such a situation, except by prolonged action of waves of small size. The beach is a strong feature on the east side of Balsam lake, a mile or more west of Baddow. It is quite clearly marked on the west side of Cameron lake, about 3 miles north-west of Fenelon Falls, and still better near the south-east corner of this lake, 1 mile west of Fenelon Falls.

From Balsover to a point a mile north of the station at Kirkfield the beach rises more than 5 feet per mile. North of Orillia there is a short interval in which it rises more than 5½ feet per mile. The rate in both localities decreases rapidly towards the south-west.

RESULTS OF FIELD STUDIES.

Areas Studied.

After the leveling party had finished, Mr. Johnston joined me in a general study of the Pleistocene deposits. Work was carried on for nearly four weeks, chiefly in the Lake Simcoe area, which was then being surveyed for both topography and general geology, by a field party under Mr. Johnston's direction. The work was done chiefly on the country surrounding Barrie and Orillia, with less extended studies around Bradford, Aurora, Tottenham, Orangeville and Acton. During the last two weeks in September, I worked alone on the Niagara peninsula between the Niagara river and Hamilton. In July, before the assembling of the leveling party, three days were spent studying the region around Wyoming, and between there and Sarnia.

Earlier Independent Work in Ontario.

In past years I have made quite extensive studies of the Pleistocene deposits of Ontario, working on an entirely independent basis. These studies were made during occasional excursions between 1893 and 1907, and have touched more or less upon the deposits of nearly every county in the Province. Some of this work was of the character of hurried reconnaissance, but in other places, especially in some parts of south-western Ontario, careful mapping was done, and much attention was given to details. In this way three or four areas of considerable extent were brought to a fairly complete state, and are ready to be reported upon at an appropriate time.

All of this work relating to southern Ontario is still unpublished, although between 1893 and 1897 seven papers relating to the earlier reconnaissances in northern and Central Ontario were printed.[1] Two maps showing on very small scales some of the recessional moraines of the continental ice sheet, and contemporary lines of drainage along the border of the ice in south-western Ontario, were published in 1899[2] and 1901,[3] in connexion with contexts relating to other subjects, but no description of the features in Ontario accompanied them. Two or three papers were read before scientific societies on subjects in this region, but only the briefest abstracts were published.

The most important area previously studied is one extending northward from Lake Erie past the west end of Lake Ontario, through parts of Norfolk, Oxford, Brant, Wentworth, Waterloo, Halton, Wellington, Peel and Dufferin counties. The area extends from the vicinity of Port Rowan and Port Dover northward to Hillsburgh, Caledon and Caledon East. This area was examined in considerable detail, thirteen weeks being spent upon it in the summer of 1899.

A magnificent assemblage of Pleistocene glacial and lake forms was found in this area. Several strong terminal moraines of the Lake Ontario lobe of the ice sheet run through this area from north to south, and their formation was accompanied by the flow of a great river along the edge of the ice in the same direction. The present season's work joins this area, and extends it both to the north and east.

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1 Bull. G. S. A., Vol. 5, 1893, pp. 620-626; Am. Geol., Vol. XIV., Nov., 1894, pp. 273-289; Vol. XV., May, 1895, pp. 304-314; Vol. XVII., April, 1896, pp. 253-257; Vol. XVIII., August, 1896, pp. 108-120; Vol. XX., August, 1897, pp. 111-128. Am. Jour Sci., IV. ser., Vol. 3, March, 1897, pp. 208-218.

2 Am. Geol., Vol. XXIV., July, 1899, Pl. II.

3 U. S. Geol. Survey, Monograph XLI., 1901.

Wyoming.

The Port Huron moraine, which is one of the most important in eastern Michigan, crosses the St. Clair river into Ontario at Moore, and runs north-east. It is deeply waterlaid, and is for that reason very faint for about 10 miles. But at this distance, about 6 miles south-west of Wyoming, it rises above the level of the Warren (Forest) beach. Wyoming is on the moraine, slightly above the level of the beach. The beach is a strong one. Less than a mile south of Wyoming station its altitude is 708 or 709 feet A. T. Three miles north of the station it occurs again, skirting the back or inner border of the moraine. It comes down from Forest through Uttoxeter, and extends to a point about 2 miles south-east of Mandaumin. Here the moraine is cut away severely, the bluff back of the beach being about 45 feet high. The moraine must have been cut back a mile or two, for its prolongation is marked by a very bouldery belt. The beach runs south-east across the moraine, and skirts its front back toward Wyoming. The moraine near the bluff has a quite rugged topography, with a number of drainless basins.

Faint gravelly ridges were found near Mandaumin and 4 miles west of there, probably representing the Grassmere and Elkton beaches of Michigan, respectively. The Algonquin beach in and near Sarnia was also examined in some detail.

The Lake Simcoe Region.

The region for 8 or 10 miles around Barrie, between Barrie and Craighurst and Orillia, with a narrow strip running seven miles north of Orillia, was studied in considerable detail. A brief reconnaissance around Barrie, in 1897, showed the presence of great bulky ridges of Pleistocene sediments, partly water-laid, running south from Lake Simcoe, curving gradually westward, and with marked depressions between them. These ridges are from 2 to 4 or 5 miles broad, and 100 feet to 200 feet high, and the valleys between are usually a mile or more in width. Four of these ridges seem clearly defined, two lying west of Cooks bay and two east of it, with a fifth, but lower ridge, apparently one of the same group, farther north near the shore of Georgian bay. These ridges were then regarded as terminal moraines of the Georgian Bay lobe of the last ice sheet.

The recent more detailed studies, however, seem to make it clear, that while they may be in part terminal moraines of a Georgian Bay ice lobe, the bulky ridges are not moraines of the last, or late Wisconsin ice sheet. If they are terminal moraines at all, it seems certain that they belong to an earlier epoch of the ice age.

The reason for this conclusion is that, with a few exceptions affecting only small areas to be mentioned below, this whole region from Tottenham, Schomberg, and Aurora on the south, to Orillia and Craighurst on the north, is what may be called, after Fairchild, a 'drumlinized' region. That is to say, the last action of the ice sheet in fashioning the surface was one of sculpturing and moulding, under the pressure and slow movement of relatively deep overriding ice, shaping the surface more or less perfectly into those remarkable hills known as drumlins.

The heavy ridges referred to form a well arranged system concentric with the shore of Nottawasaga bay, just as would be expected if they were terminal moraines of a Georgian Bay lobe moving from the north-west. But the drumlins, which cover a large part of the region, and record the direction of the last ice movement, trend mainly north-east to south-west, or, in a general way, parallel to the ridges and transverse to any ice movement which may have come from Georgian bay.

Most of the region between Orillia and Barrie is more or less drumlinized, and the drumlin forms continue in a belt 4 or 5 miles wide, down the west side of Cooks bay and the Holland River swamp, to the high ground east of Tottenham. The country east of Cooks bay, for several miles south of the shore of Lake Simcoe, has many drumlins, some of them very perfect forms.

Other parts of the area are not drumlinized, but gently undulating, nearly flat surfaces. They may be classified as ground moraines, or 'till plains,' and are quite distinct from the usual forms of terminal or marginal ice deposition. Some parts of this region have forms like table lands, although composed entirely of drift to depths much below the local stream valleys. The mesa-like mass west of Barrie is the most prominent of these. It derives its table-like form mainly from effects of erosion. It was heavily undercut along its west side by the waves of Lake Algonquin; its south side forms the north bank of the Barrie-Colwell channel, and its north side is the south bank of the Little Lake blind valley. It thus appears to have been carved out of a more extensive, high plain. The country south of Allandale, and around Thornton as far as Cookstown, is of the same character—a high till plain, with a flat or gently undulating surface.

The great ridges east and west of Newmarket and Aurora look like massive moraines, yet their surfaces show occasional drumlin forms, with north-east-south-west trend, as though they had been overridden from the north-east.

North and east of Orillia the drift is relatively thin, but west and south-west it becomes quite thick. In the northern part of the township of Oro some of the gravel hills rise to an altitude of nearly 1,300 feet. While the depth to rock is not known, it seems certain that the drift here is at least 500 to 600 feet thick. From Barrie south to the county line the drift is said to have an average depth of 300 feet or more.

Throughout this area of deep drift a considerable part is made up of water-laid or lake sediments, as distinguished from glacial or ice-laid deposits. Locally, as in the case of the high mass west of Barrie, a large part is water-laid—chiefly stratified sands and clays. But ice-laid drift is generally dominant. This is shown by the general prevalence of true, stony till to a considerable depth over the surface, and by the great quantities of boulders which the waves of Lake Algonquin have collected from the cliff cutting along its shore.

Three valleys in this area deserve particular mention, although their origin and relations are not yet understood. One of these is the so-called Barrie-Colwell channel. This valley extends westward from the head of Kempenfeldt bay to the valley of the Nottawasaga. It is about 6 miles long, nearly 2 miles wide at its east end, and 3 miles at its west end, and slopes gently westward. It appears to be in some sense a continuation of the long narrow depression occupied by Kempenfeldt bay. It is sharply cut through the high ground, and its banks on either side are steep and over 200 feet high.

Another remarkable valley is associated with Cooks bay. This is the valley occupied by Holland river and the great marsh. The marsh is about 2 miles wide, and extends the depression of Cooks bay about 16 miles to the south-west from the present bay shore.

The third channel-like valley is occupied in part by Little lake, 2 miles north of Barrie. This valley extends south-east from Midhurst for about 8 miles, curving gradually around to the north, after passing Little lake. Northward from its east end a broken depression connects with another narrower valley, running back to the north-west past Dalston and opening out on the low ground about 3 miles north-east of Midhurst.

The origin and history of these valleys has not yet been worked out, but the studies of this season show conclusively that they are older than formerly supposed. Evidences were found which seemed to show clearly that each of these valleys was in existence before the advent of the last ice sheet. In its eastern part, where it curves to the north, the Little Lake valley is broken, and interrupted by imperfect drumlin hills, showing ice movement from the east. Two small drumlins, of very perfect pattern, rise from the floor of the Holland River marsh a mile and a half south-west of Bradford. These forms prove that these valleys were occupied by the moving ice sheet after they were made by other agencies.

According to Kivas Tully, Kempenfeldt bay is deeper than most parts of Lake Simcoe, the deepest part of the lake being at the mouth of this bay. If the depression of this bay and its westward extension, and the depression of Cooks bay and the Holland River marsh were in existence at the advent of the last ice sheet, the ice might have adapted its movement, with but slight deflexion, to the course of these deep depressions, and thus have kept them open, if indeed it did not deepen them. But it is not so easy to apply this suggestion to the Little Lake valley, the main part of which trends west-north-west, and which has its open end in that direction.

If any terminal moraines attributable to the retreat of the last ice sheet occur within this area, they would probably be laid down in water, and would be very faint forms. Around Kempenfeldt bay, and along the shore towards Orillia, there are faint suggestions at a number of places of a marginal moraine about 100 to 150 feet above the lake, but these evidences are regarded as very uncertain. The sloping floor of the channel west of Allandale suggests an ice mass resting in Lake Simcoe, and discharging detritus westward through the channel. On the western border of the area investigated, west of Cookstown and Beeton, prominent ridges were seen at a distance, which looked like terminal moraines, but they were not examined further.

The most remarkable exception to the prevailing ground moraine surface of this area is in the northern part of the township of Oro, where a cluster of sand and gravel hills, the highest rising to nearly 1,300 feet in altitude, occupies an area 8 or 9 miles long east and west and half as wide. Its topography is characterized by high knobs and ridges and deep basins, and it is trenched by many steep-sided ravines. Much of the mass is composed of gravel and sand in horizontal beds, but there are also many morainic knolls of sandy, stony till, especially in the highest central ridge and along the south side. The north side is lower and more sandy, and much of it duney. Through the western half there is a drainage valley running south-west, and a large river evidently flowed in that direction through it at a late stage of the hill formation.

This deposit appears to be a combination of outwash, kames and moraine, and to have been made during the retreat of the last ice sheet. The north-west part has not been examined.

In the Lake Simcoe area the Algonquin beach was traced, with almost entire continuity, from a point on the county line about 2 miles north-east of Schomberg to a point 3 miles north-east of Ardtrea. Near Schomberg its altitude is 724 feet A. T., and at the northernmost point 883 feet, a rise of 159 feet in about 52 miles on a straight line. It is interesting to note what would happen if the land were depressed back to the relative attitude it had when the Algonquin beach was made. The surface of Lake Couchiching, 3 miles north-east of Ardtrea, would be about 20 feet below the surface of Georgian bay, and almost all of Lake Simcoe would disappear. Scugog lake would disappear entirely.

Southward from the western border of the area just described, recent studies about Aurora, and earlier studies around Toronto, show the same sort of country—deep drift, largely lake sediments, as shown by Coleman near Toronto, and nearly all the surface drumlinized. The Oak Ridges, extending from Jefferson and Bond lake north-east for 8 miles (as far as examined), are a strong, complex, land-laid terminal moraine laid down along the north-west margin of the Lake Ontario lobe of the last ice sheet. Between this ridge and the lake the surface is drumlinized by ice moving towards the north-west from the basin of Lake Ontario. There is no outwash from the south-eastward face of this moraine, but there is a large amount of it—gravel and sand—from the north-westward face. The whole surface of the country between Vandorf and Ballantrae is covered with this outwash. The south-east side of the moraine is nearly all till, with undulations dying out towards the drumlinized plain to the south-east. The drumlin forms between Lake Ontario and the Oak Ridges moraine have axes trending north-west and south-east, showing that the ice moved up the slope towards the north-west—about at right angles to the drumlin axes in the region around Lake Simcoe.

The Escarpment Area.

A few days were spent studying the region around Orangeville and Caledon.

The same grand features—moraines and old drainage lines—found farther south in earlier studies were found to continue northward. Three strong moraines were found east of Orangeville. The western, or earliest one, runs about north-west from a point 1 to 2 miles east of Caledon, where it is cut off by a late stage of the great ice border river, to a point 2 to 4 miles north-west of Orangeville. At this place it abuts upon an earlier bed of the old river. This moraine is 2 to 3 miles wide, and rests on the high ground about 2 miles back or west from the edge of the escarpment. The next later moraine rests against the face of the escarpment near its top, and towards Mono Mills rises slightly above the cliff and overlaps a little on the plain. It follows the escarpment in a broad curve, from a point south of Caledon to and beyond Mono Mills. An old river channel follows the same course in front of the moraine. The moraine is banked up against and upon the face of the escarpment, and a minor drainage line appears to mark its lower limit, and at the same time the front of a third moraine which rests on the lower part of the slope.

The great river channel which passes just east of Orangeville lies in a deep, crooked valley, entirely removed from any possible exposure to wave action. Its gravel bars are prominent, and are distinctly river bars—demonstrably so from their shape, position and composition.

A very pronounced line of drainage from the ice front westward occurs at Mono Mills and is marked by a great moraine-headed gravel train, remaining now as a great terrace facing eastward over the lower country, but with its surface sloping westward, or in the direction that the river flowed. This drainage line was also in operation when the ice front rested on the next earlier moraine; for a great, broken esker runs west through the moraine east of Orangeville, bending south towards Melville. This culminates in an enormous kame on the west side of the river 2 miles south of Orangeville, where the crest rises to an altitude of about 1,620 feet A. T. (aneroid).

The old river bed was followed about 5 miles north of Orangeville, and nearly to Cataract on the south.

West and north-west of Orangeville there is an area of drumlins.

The Niagara Peninsula.

The last two weeks of the season were spent on the Niagara peninsula. It was, of course, impossible to cover the peninsula thoroughly in so short a time. What was done is, therefore, more of the nature of preliminary work, and the results are fragmentary. But they are very satisfactory as far as they go.

Three terminal moraines had previously been traced by me through the region around Buffalo, in New York—one down to the shore of Lake Erie at a point 4 miles south of Buffalo; another into and through the city of Buffalo, to Fort Porter on the bank of Niagara river, and a third to the bank of the river about a mile and a half west of Tonawanda, N.Y. The first of these moraines reappears on the Ontario shore of Lake Erie at Crystal beach, and was traced in faint form to a point about 9 miles west of Port Colborne; the second enters Ontario at Fort Erie, and was traced 5 miles west of the river.

The moraine which passes Tonawanda probably continues in faint form across Grand island, but has not been traced. A moraine which appears to be a continuation of it was found on the Canadian side at Niagara Falls (south centre). This moraine has been heavily cut away by the rapids above the falls. The highest place on the bluff at Falls View marks its crest. South-east of this point the crest is gone, but a remnant of the front slope runs on towards Chippawa.

The Crystal Beach moraine was traced this season 2 or 3 miles farther west, but grows much fainter westward, and becomes lost or obscured, first in the marshes north of Lowbanks, and farther on in the sandy plain to the north-west.

The Fort Erie moraine is much stronger than the Crystal Beach ridge, and is a conspicuous feature as far west as a point about 2 miles north of Ridgeway. Thence to the high ground west of Fonthill, the moraine is almost too faint to be traced, and some further study will be required to make sure of its course.

The Niagara Falls moraine, beginning at the high bluff overlooking the Horseshoe falls, runs north-west to Lundys Lane, the monument, cemetery, church, and observatory being on its highest knoll. Thence it runs west about two and a half miles, with Lundys Lane upon it, and then turns slightly to the south-west in a direct line to the village of Fonthill. Beyond this it was not traced, but appears to bend around the north side of the high hill west of the village, and then starts off north-west, probably passing North Pelham.

The Escarpment or Vinemount moraine is in some respects the most remarkable found thus far on the Niagara peninsula. It runs along the top of the escarpment near its edge. This moraine is narrow, but rises in sharp relief from the flat plain south of it, and is a conspicuous feature in the landscape. It is finely developed at a point 2 miles south of Beamsville, and runs with the same strength, and with only three slight breaks, to a point 3 miles west of Vinemount. Beyond these limits it was not traced.

Back of the escarpment, south and south-west of Hamilton, fragments of three moraines were found. The first one passes just south of Ryckmans Corners; the next passes through Glanford, and the third just north of North Seneca. They all trend north-west to south-east at these places, and converge somewhat north-westwards towards Ancaster. The first and third of these ridges are fairly strong, but the middle one is rather faint. The drainage, and the contours as given on the Grimsby sheet of the topographic map, seem to show very clearly the courses of all three of these moraines for some distance south-east from the places named. The two north specially seem very plain. The Ryckmans Corners moraine bends southward a little around the Mount Albion embayment in the escarpment, and passes Alfrida, and a little south of Tapleytown, Tweedside and Grassie. The Glanford ridge seems quite clearly indicated in a straight course from Glanford past Binbrook, and a little north of Abingdon and Caistor Centre. The North Seneca ridge seems indicated in a course passing south a mile west of Tyneside, to a point two and a half miles east of Caledonia, and thence 3 or 4 miles south-east.

If the Ryckmans Corners moraine takes the course indicated by the map, then it is an independent individual, not to be confounded with the Vinemount or Escarpment moraine. Thus, four distinct moraines forming a consecutive series have been identified thus far in the western part of the peninsula, and three in the eastern.

The moraines all seem to grow fainter in the middle part of the peninsula, and while, with one or two exceptions mentioned above, the fragments described are all very clear, the work of the present season was not complete enough to make possible the correlation of the eastern and western fragments.

The moraines of this peninsula are all water-laid. They were built at the front or edge of the ice sheet while it paused for a time, standing in water 100 to 200 feet deep. This circumstance greatly modified their character and surface expression. Moraines laid down in deep water are generally so broad and low and smooth that they are barely, if at all, perceptible to the eye as ridges. Still, they sometimes control the local drainage in a remarkable way and their course is often clearly indicated by the plan of the smaller streams. Being all water-laid, it is surprising that such considerable parts of the moraines of this peninsula as have already been observed are so strong and easily traced.

The drainage system of the Niagara peninsula is quite remarkable—evidently very different from what it was in pre-glacial times. Only one point can be touched upon

here. This relates to the features that control the upper part of the drainage basins of Twenty-mile creek and Welland river; the former above St. Ann, and the latter above Wellandport. These two drainage basins show in a wonderfully perfect way how it is that faint waterlaid moraines can control local drainage. The Mount Albion embayment in the escarpment must have received the drainage of a considerable area in pre-glacial times. Its drainage area now is limited by the morainic ridge which passes Ryckmans Corners. A careful examination of the Grimsby topographic sheet shows that a low ridge runs eastward, parallel with the escarpment, to and beyond Grassie, and that this ridge forms the divide, or boundary, between the hydrographic basin of the escarpment streams in the north and that of Twenty-mile creek on the south. This ridge is the continuation of the moraine which was traced from Ryckmans Corners to the escarpment a mile north-east of Ancaster. The headwaters of Twenty-mile creek are on concession 4 of Ancaster, aout 3 miles south of the escarpment, and 5 miles west of Hamilton. Only two or three lots farther west, and about half a mile north of the hamlet of Southcote, are the extreme headwaters of Welland river. The low morainic ridge running north-west from Glanford divides the waters of Twenty-mile creek from those of Welland river, and this ridge finds a continuation in a very flat, low divide, which runs eastward past Binbrook and Abingdon; and although it divides the hydrographic basins of these two streams, it becomes so low and flat that no ridge, or divide, is visible to the eye.

The south rim of the Welland hydrographic basin is defined in the same way by the moraine which passes North Seneca. Although these streams rise so close to the west end of the Lake Ontario basin and within a mile of each other, they flow in parallel courses many miles towards the south-east and east, between these controlling morainic ridges, before they are able to find a way of escape.

The configuration of the moraines near Hamilton, Buffalo and Niagara Falls, so far as now made out, is controlled not by geological structure, but by the topographic forms near by to the north, especially by the basin of Lake Ontario and the course of the Niagara escarpment. Given an ice mass overflowing the flat plain south of the escarpment from the basin of Lake Ontario, the arrangement of the moraines is just such as would be expected.

Outcrops of limestone are common along the south shore of the peninsula, and for a few miles inland, and also along the Niagara escarpment between Niagara and Queenston, but exposures of bed rock are comparatively rare in the interior, where the moraines referred to control the drainage. Neither the courses of the moraines nor of the streams in the area south-west of Hamilton are controlled by the form of the rock surface beneath them.

There are a few swampy areas containing peat in considerable quantities, the largest being in Wainfleet and Humberstone townships. The township of Moulton, and the north-west part of Wainfleet, are covered with fine sand, which has been considerably modified by wind action. The soil over nearly all the peninsula is clay, generally rather heavy, and with few stones—characters which seem to be due largely to its deposition in lake waters.

Two, or possibly three old shore lines were found. One, in the village of Fort Erie, has its crest about 15 feet above Lake Erie. This beach occurs in fragmental form along the shore, at least as far as Lapp point. At Fort Erie and Port Colborne it appears to be a little above the modern storm beach. It is a conspicuous feature at Lowbanks, and most of that littoral village is built upon it. Here it is slightly lower, rising not over 8 or 10 feet above the lake, and is distinctly lower than the modern storm beach. It shows considerable evidence of age, being weathered much more than the modern beach.

On the top of the moraine running west for about 4 miles from Fort Erie, there is a very well defined ridge of gravel, which probably is the Lundy beach of Spencer, and the Dana beach of Fairchild. Its altitude, determined by aneroid, is about 640

feet A. T., or about 65 feet above Lake Erie. Another fragment of this beach runs 6 or 7 miles north-east from Ridgeway along the crest of a low limestone escarpment. Other bars and small island fragments of this beach were found farther west. A beach—probably the same—occurs at Lundys Lane; it is not very well defined, but has an altitude of 675 to 680 feet. Only faint suggestions of this beach were found around the east and south flanks of the great hill west of Fonthill, but no doubt it is present there.

PRELIMINARY REPORT ON MEASUREMENTS OF ALTITUDE OF THE ALGONQUIN AND NIPISSING SHORELINES IN ONTARIO. JULY 6-AUGUST 11, 1908.

(J. W. Goldthwait and R. C. Jacobson.)

(In this report are embodied also eight measurements made later in the summer, by F. B. Taylor and W. A. Johnston.)

The relation of this region to others previously studied in the United States is discussed in a paper by one of the authors, published in the *Journal of Geology*, July, 1908. The ideas there expressed as to correlation have been confirmed by the summer's work.

The Algonquin shoreline in Ontario corresponds in present altitude and warped attitude with the same shoreline in the region at the north end of Lake Michigan, and around the Straits of Mackinac, for which complete data are at hand.

The newly collected data in Ontario fully confirm the preliminary correlation in which the United States data were correlated with those of Spencer.

By the measurements here summarized, the area in which the attitude of the upwarped water plane of Lake Algonquin is known is just about doubled; for the isobases can now be extended across Lake Huron and the Province of Ontario, as far as the divide between Lake Algonquin and Lake Iroquois, south and east of Lake Simcoe. The facts gathered on this five weeks' survey thus mean a long step forward towards the understanding of the extent and exact nature of those differential uplifts which changed the altitude of all northern North America, at the close of the ice age, and which raised much of south-eastern Canada out of the sea.

THE MEASUREMENTS.

The Algonquin shoreline was measured with the wye level at over fifty distinct localities, distributed as follows:—

About	6	localities	on the east shore of Lake Huron.
"	10	"	around Georgian bay.
"	18	"	" Lake Simcoe.
"	15	"	east of Lake Simcoe, near the Kirkfield outlet.
"	4	"	in the Archaean highlands farther north, viz., Bracebridge, Huntsville, Trout Creek and North Bay.
"	53		

In many places the Nipissing shoreline was also measured. In a few places intermediate beaches, or higher ones, were measured.

RECONSTRUCTION OF THE WARPED ALGONQUIN WATER-PLANE.

The altitude of the Algonquin shoreline, in feet above sea level, is shown in ink figures on the large maps (*a*) U.S.L.S. chart of Great Lakes, and (*b*) a tracing from standard topographic sheets of the Canadian Government.

Measurements at Sarnia, Kettle point and Grand Bend, fix the Algonquin water-plane in a horizontal position, at about 606 feet A. T. At the southern end of Lake Huron, as in the middle and southern parts of Lake Michigan, this water-plane shows no sign of differential uplift such as affected the more northerly districts.

Measurements from Bayfield (613 feet A.T.) northward along the east Huron shore indicate a rising of the plane to the north-north-east, at a rate that increases, first slowly (less than 1 foot per mile) and then rapidly (becoming 5 feet per mile over Georgian bay and the north end of Lake Simcoe). This is shown by the spacing of the isobases as will be explained.

In this region, where the plane has been unwarped to a slanting position, it is possible to draw a set of isobases, or lines of equal deformation of the water-plane. For instance an isobase connecting points where the plane now stands 780 feet A.T. can be drawn very satisfactorily with reference to these observations: Wiarton 776; Hogg 778; Meaford 783; Allendale 782. Likewise a 770 foot line, if drawn parallel to the 780 foot line, harmonizes with the stations: Clarksburg, 769 feet; Collingwood, 767; Colwell, 774; and Lefroy, 775. It must be kept in mind, however, that a beach or a shore terrace was not level when first constructed, but varied a few feet; consequently a variation of say 5 or 6 feet in the measurements need not be taken as a disturbing factor in drawing isobases. Slight discordances must be expected.

The direction of these isobases along the south shore of Georgian bay is north 68 degrees west. If extended across Lake Huron in this direction, or rather with a slight curvature southward, the 770 feet and 780 feet isobases pass not far south of the Straits of Mackinac, the district where the Algonquin beach stands at just that altitude (770-780 feet). The correlation, therefore, seems undeniable. It is strengthened by a comparison of the rate of southward inclination of the water-plane in the two widely separated regions.

The direction of steepest inclination (or dip) of the warped plane here (in south-western Ontario), is south 22 degrees west; while over the north end of Lake Michigan it is about south 15 degrees west.

Isobases for 760 feet, 750 feet, 740 feet, 730 feet, etc., etc., if drawn parallel to these, and at wider intervals towards the southerly limit of deformation, lie harmoniously with the several measured localities where the Algonquin beach is best developed, viz., Port Elgin, 710 feet; Kincardine, 666 feet; Bayfield, 613 feet; Owen Sound, 748 feet; and in the Simcoe basin, Holland Landing, 752 feet; Bradford, 749 feet; Beeton, 729 feet. In other words, the inclined plane flattens rapidly southward, and becomes horizontal somewhere between Bayfield (613 feet) and Grand Bend (607 feet).

In the Simcoe basin, stations are comparatively close together, and the Algonquin beach can be traced almost continuously from the south end (749 feet at Bradford), to the north end (883 feet north of Ardtrea). The rate of northward ascent is as follows:—

Over the greater part of Lake Simcoe, 3 feet per mile. Along the south shore of Georgian bay, about 4 feet per mile.

South of this, as computed from Owen Sound, Port Elgin and other stations on the east side of Lake Huron, and from a few at the extreme south end of the Simcoe basin, 2 feet per mile.

Farther north, as shown by stations north of Orillia in the Simcoe basin, the rate of ascent increases somewhat abruptly, to over 5 feet per mile. It is doubtless a significant fact that just beyond, the Archaean border appears.

Between Lake Simcoe and Balsam lake, at the head of the old Trent outlet of Lake Algonquin, the same steep tilt rate of over 5 feet per mile is shown around Balsover and Kirkfield; and observations on the north side of the Kirkfield outlet, nearby, support the idea that this steep uplift continues northward.

Just east of Kirkfield, measurements south of Victoria road, at points on Balsam lake and on Cameron lake, at Fenelon Falls, place the Algonquin plane distinctly below that of the district just west of Kirkfield; although one would expect to find it higher, because of the easterly component of uplift expressed by the diagonal trend of isobases. This is believed to mean either that there is locally a great irregularity of uplift, a condition unknown over the wide region around Lakes Michigan and

Huron where detailed studies have been made; or that the basins of Balsam and Cameron lakes were on the slope of the old Kirkfield outlet, and that the sill which controlled the level of Lake Algonquin, while this outlet was running, was at Kirkfield, and not at Fenelon Falls, or any other point south-east of Kirkfield.

The Archaean area north of the Simcoe region, and bordering the Great Lakes on the north-east, has a fragmentary record, and is not readily accessible for leveling. Measurements at Bracebridge, Huntsville, Trout Creek, and North Bay, on a well marked beach, which may well be the Algonquin, suggest that the Algonquin plane there is either dislocated or very irregularly warped, in strong contrast to its wonderful uniformity over the whole middle and southern parts of the Great Lake region.

In view of visible faults in the limestone near Kirkfield (exposed at the surface), and of the possible function of the Archaean area as the seat of repeated and irregular uplifts, this contrast is not regarded as an objection to the correlation of beaches at Trout Creek, North Bay, etc., which F. B. Taylor made some 15 years ago. An interesting field of inquiry is thus re-opened.

MONTREAL RIVER DISTRICT.

(W. H. Collins.)

In anticipation of the continued westward progress of prospecting activity in the Timiskaming region, the writer was directed to conduct the field work of 1908 in the area between the east and west branches of Montreal river. This work was commenced on July 1 and continued up to the end of September.

Hitherto this area has not been carefully mapped, and no accurate surveys have been made in it except the Algoma-Nipissing boundary line run in 1897 by Alexander Niven and the exploratory line of 1867 by Sinclair. Before the summer was well advanced, an influx of prospectors had begun and the need of reliable topographical information became very apparent. Considerable time was, therefore, occupied in making a micrometer and compass survey of all the waterways within the area explored. Information concerning remote ponds, small brooks, and the conspicuous hills was obtained by rapid chain and compass traverses.[1]

ROUTES TO DISTRICT.

The most favourably known route to this area begins at Latchford, a station on the Timiskaming and Northern Ontario railway, 93 miles north of North Bay. From here the Montreal river is navigated up-stream for 56 miles, daily trips being made by a line of small steamers. Elk lake, the northern terminus, a village of several hundred inhabitants, has sprung up during the past eighteen months, coincidently with the needs of the country. It forms the real headquarters and point of departure for Montreal River prospecting parties, being already equipped with stores, a post office and a mining recorder's office. From Elk lake various canoe routes extend to the east branch of the Montreal river, the best known being a chain of portages called the Bloom Lake route, which leads from the main river 11 miles above Elk lake directly west to the East branch. From the East branch numerous good canoe routes connect with the West branch and Duncan lake. The construction of a winter road directly to Gowganda lake from Elk lake is anticipated.

TOPOGRAPHY.

The country drained by the East and West branches of the Montreal river differs only in detail from the typical Archaean peneplain. The surface is everywhere irregular and hilly, differences of elevation being, as a rule, under 200 feet. But, at intervals, are more conspicuous hills reaching to heights of 300, 400, and, in one case, 550 feet above the general level. Most of the surface is thickly forested, hindering ready comprehension of its character. But, from the top of any of the higher hills, a long succession of rocky elevations and swampy depressions is visible, the latter commonly containing small lakes. Soil is not abundant and is usually collected in the lower levels; it consists mainly of glacial sand and gravel, sometimes forming plains of notable extent, as, for instance, at the north end of Duncan lake. Comparison of various parts of the area indicates a tendency to the development of parallel ridges extending in a direction varying from north and south to north-east and south-west. The water courses are to some extent governed by this feature, but in addition exhibit

[1] It is proposed to have a preliminary geological report and map of the district ready for field use in the coming spring.—DIRECTOR.

a remarkable tendency to diverge sharply in directions at right angles, producing, as emphasized in recent reports upon the neighbouring region published by the Bureau of Mines, two sets of courses, the one extending about north-east and south-west, the other about east and west.

GENERAL GEOLOGY.

The details of the geology of the area are somewhat complicated, but its general features are readily apparent. The region is characterized by a few distinct rock systems separated by discordances due to enormous gaps in the geological succession. The basement of the whole area consists of a complex of Keewatin and Laurentian rocks. This complex possesses a hummocky eroded surface developed during Pre-Huronian times, and upon it the younger Huronian system rests unconformably. The complex consists entirely of crystalline rocks—either dark schists or gneisses—characterized more particularly in the case of the schists by highly tilted attitudes and well-developed secondary foliation. They are with very slight exception igneous rocks more or less metamorphosed.

The Huronian series lies directly upon this very much older surface, with which it is in striking contrast. All its members are sedimentary and lie horizontally or inclined at comparatively low angles. Conglomerate, greywacke slate, quartzite and arkose are its constituent rocks. This series, which no doubt once entirely covered the underlying crystalline complex, has been subjected to erosion which has locally worn it completely away, exposing the base upon which it rests. The relations of the Huronian to the Keewatin and the Laurentain may be compared with that of a badly worn carpet, through holes in which portions of the floor are visible.

There are no other sedimentary rocks in the district, but all the preceding groups are intruded by the now well-known Post Middle Huronian diabase. This rock has already been frequently described in reports of the Geological Survey and Bureau of Mines; moreover, it is not readily confused with any other rock in the Montreal River district. Its freshness, dark colour, and unmistakeable crystalline, igneous character are sufficient criteria for its determination.

AREAL DISTRIBUTION OF FORMATIONS.

Boundaries between the Huronian sedimentary series and the underlying Keewatin and Laurentian complex are irregular but definite. Small isolated patches of slate and conglomerate may lie scattered over an area of the latter as well as enclosing it; but there is never any difficulty in distinguishing them and deciding where they terminate. Also contacts between Post Lower Huronian diabase and the other rocks are capable of sharp definition. Between the Keewatin and Laurentian, however, much more difficulty exists, the older schists being, at their contacts with the gneiss, frequently caught up in varying proportion by the latter. In such cases, a wide zone of intermingled materials from both formations represents the contact, and a dividing line can be drawn only arbitrarily.

Keewatin and Laurentian.

Considering both formations at once, two considerable areas are distinguishable:

(1) An area occupying the country north of Obushkong lake between the East and West branches with extensions southward between Obushkong and Firth lakes, and westward to Duncan lake. That portion north of Obushkong is composed of biotite gneiss varying locally in texture and degree of gneissification. Hornblende granite-gneiss is less widespread. Patches of hornblende gneiss, probably representing absorbed Keewatin material, occur frequently. To the south, between Obushkong and Firth lakes, the gneiss gives place to Keewatin green schists and altered eruptives.

The former are chiefly the metamorphosed products of old porphyries and allied igneous types which have been squeezed into chlorite and hornblende schists. They stand almost vertically and strike, in general direction, north-east and south-west. Associated with these is a fresher, less compressed diabase, and a basic rock, of coarse grain and rich in olivine, which in places has been altered to serpentine. The same green schists and old pyrite-bearing diabase, together with some hornblende granite-gneiss, form a triangular area reaching from the West branch north-westward to the middle of Duncan lake.

(2) An area lying west and south of Pigeon lake.

This consists, so far as examined, chiefly of Keewatin, the rocks being, as before, steeply inclined and striking in the same general direction. Much fractured, weathered diabase occurs rather abundantly along the west shores of Pigeon lake; it resembles some contact phases of the Post Lower Huronian diabase and might be confused with it. So badly fractured is this rock in some places that it exhibits a brecciated structure, the spaces being filled by a network of calcite veins. A much fresher dike rock, probably a hornblende-lamprophyre, occurs frequently in this area. The abundance of small rod-shaped hornblende crystals distinguishes it from the Post Lower Huronian diabase. In this area the Laurentian is represented by a small body of somewhat gneissified hornblende syenite, lying less than half a mile to the south-west of Pigeon lake.

Huronian.

The major part of the area is covered by Huronian sediments. These rocks, considering their age, are remarkably well preserved and show only local indications of severe disturbance. In general, they lie at angles up to twenty-five degrees; in the neighbourhood of a diabase intrusion they are sometimes much more steeply inclined and are shattered so as to simulate certain Keewatin forms. The general dip is to the east, the strike north and south to north-east and south-west. The basal member is a conglomerate sometimes possessing a breccia structure and remarkable for the irregular distribution and frequently enormous size of its included boulders. This grades upward through greywacke into finely laminated slate and quartzite, followed in turn by an upper conglomerate. Arkose, referred in other localities to the Middle Huronian, occurs on Duncan lake, and more extensively around Obushkong and Gowganda lakes.

Post Lower Huronian Diabase.

The diabase takes the form of dikes, sills, and possibly, stock-like masses, the form being apparently dependent upon the character of the formation into which the material was intruded. When enclosed by Huronian sediments it appears frequently as thick sills extending along the bedding planes. When the Huronian is thin, or the Laurentian or Keewatin is exposed, dikes are more common. The larger bodies may be stocks.

The dikes are of ordinary diabasic character, but in the larger bodies very notable differentiation of the original rock material has taken place. Within small limits the texture may vary from that of a medium grained diabase to a coarse gabbroid type. In mineral composition the average rock is a quartz diabase, but this type often grades into a more acid one of syenitic composition and of characteristically coarse grain and reddish colour. Basic masses, almost black in colour, are less numerous. All phases of the diabase are cut by dikes or veins of a pinkish rock known in the field as aplite. There is good reason to believe these dikes to be of the nature of pegmatites and representative of late stages in the differentiation and solidification of the molten material which produced the diabase. After much of this material had already consolidated and contracted, developing fissures in itself, the residuum, grown aqueous and acid, rose in the fissures and solidified to form the aplite

veins or dikes. These bodies, as a rule, are less than 2 feet wide, though in one observed case considerably more. They are finer textured than the ordinary diabase, light pink in colour and, therefore, not to be readily confused with the diabase, much less with the Laurentian gneiss, although such mistakes have been made by newcomers unacquainted with the rocks of the district.

ECONOMIC GEOLOGY.

Silver.

A widely circulated and seemingly reasonable opinion, holds the diabase responsible for the valuable silver-cobalt deposits of the region. The testimony of the Montreal River district, as yet known, supports this belief.

Early in August, a discovery of native silver was made just west of Gowganda lake, and recorded at Elk lake early in September. Up to that time only a small number of prospectors had been at work in this locality, but immediately following the news of discovery came an influx of several hundred men. In a few days all the promising country for a distance three miles west of Gowganda had been staked, and search instituted for mineral deposits sufficient to validate the claims. The results on the whole have been highly satisfactory. At the time of his leaving the district the writer knew of four bona-fide silver discoveries. At that time systematic prospecting had scarcely begun, the country was everywhere forest-covered, and exploration was impeded, even rendered somewhat hazardous, by the presence of forest fires, so that an intimate acquaintance with the area and its possibilities was very difficult to obtain. However, something has been learned concerning the geological structure and the mineral possibilities as visible at the surface. Westward from Gowganda lake the formation is Huronian, traversed in a north and south direction by three elongated bodies of diabase. The more easterly occupies the peninsula between the two long northerly bays of the lake and extends thence northward for about a mile. It has a maximum width of 60 chains. A central mass 7 miles long and about 40 chains wide extends parallel to the west bay and at a distance inland of less than half a mile. A westerly body of about equal dimensions extends from Elkhorn to Firth lake, being traversed by the chain of lakes used in travelling from Gowganda to the West branch. Various fingers and dikes extend from each of these bodies, but are of subordinate importance.

In the easterly body, up to the end of September, no silver had been found although a considerable number of mineralized veins were being examined by trenching. These veins occupy fissures in diabase and vary in width from a few inches to 2 feet. The largest of these was reported by the owner, Mr. McLaughlin, to be continuous for a quarter of a mile. The vein matter is, peripherally, quartz with a central filling of calcite, the relative proportions of the two minerals being quite variable. Chalcopyrite occurs, often abundantly, in all of them, pyrite less frequently. Cobalt bloom is largely in evidence, and on the property of Mr. O'Reilly smaltite was being obtained in small amounts, together with native bismuth. In one vein the calcite was strongly impregnated with minute crystals of magnetite.

The central diabase body has already been proved to be, judging from surface indications, richly silver-bearing. On a group of four claims owned by Messrs. Mann, Milne and associates, a vein was seen in which native silver occurs plentifully. The calcite gangue had been weathered out, leaving, in a diabase bluff, a crevice about 5 inches wide filled with decomposed earthy matter. Silver formed a more or less continuous vertical sheet as far as the vein had been uncovered, the average thickness of this sheet being about one-quarter inch. The lower undecomposed portion of the vein had not been exposed. At other points on these properties native silver, small quantities of argentite, and a 1″ vein of solid smaltite had been found.

Bloom, chalcopyrite, and galena were widely distributed. Farther south, native silver had been obtained in good quantity at the surface by Mr. Dobie and his partner. At the extreme south end of the mass F. A. McIntosh was surface stripping upon a group of seven claims, but at that time without important result. Subsequent to the writer's departure from the field valuable silver veins were discovered on this property. Silver had also been obtained in the western mass by W. H. Margueratt, the deposit occurring on Margueratt lake near the middle of the diabase body.

Native silver has, therefore, been demonstrated to exist at points distributed over an area of about 10 square miles, in much the same mineral association as at Cobalt and neighbouring camps. In this case all the finds yet recorded are within the diabase. The Huronian, however, has not been proved to be unmineralized, prospecting having been confined almost wholly to the diabase areas. The aplite dikes have not yet been proved to carry more than a little disseminated smaltite and chalcopyrite, although in James township, not far away, they are ore-bearing. Although not valuable in themselves, in the Gowganda area they may have a positive significance with regard to the existence of mineral deposits. They seem to occur most abundantly where differentiation of the diabase magma has proceeded farthest, and where, if the supposed relation between the diabase and the silver-cobalt mineralization does exist, conditions for the formation of mineralized veins would be most favourable.

The intimate connexion between silver deposits and diabase at Gowganda lake naturally draws attention to other diabase bodies in the neighbourhood. Of these the most extensive is a great sill-like mass which, beginning on Duncan lake at about 3 miles from its north end, follows that body of water, more or less closely, to its junction with the West branch; thence southward to where the West branch turns sharply east; thence east, crossing Wapus creek 1 mile from its mouth, and from there north-eastward for about 5 miles, beyond which it could not be traced. In width it varies from 10 to 60, or more, chains. Very little work had been done on this body during the summer of 1908, although results of search had not been distinctly negative. Very thorough and well directed work was being done on Wapus creek, under the supervision of Mr. Robert Lett, with the result that numerous veins and aplite dikes had been exposed and, in cases, had yielded small quantities of bismuth and disseminated smaltite, also abundant bloom and chalcopyrite, but no free silver. The evidences of extensive differentiation at this point are promising signs. Bloom, chalcopyrite and galena are also to be found throughout the diabase body as seen along Duncan lake.

Two masses of diabase, each about 2 miles long and 40 chains wide, lie immediately north-east of Firth lake, in Huronian and Laurentian formations. A presumably extensive diabase area lies between Duncan lake and the West branch, extending in a north-east and south-west direction, and most readily reached from a point on Duncan lake 3 or 4 miles from its north end. Little or no prospecting seems to have been done on these bodies.

Iron ore.

Hematite is known to exist in considerable amount on the west side of Nest lake, an expansion of the East branch, a few miles north of the area here under consideration. In small quantities it was observed near the head of Kenisheong lake, and on Duncan lake 5 miles above its junction with the Montreal river. In both cases the hematite fills interstices in Lower Huronian conglomerate.

A Keewatin iron formation occurs about half a mile to the north-east of Gowganda lake, on which a number of claims have been staked by Mr. Cryderman. Magnetite is present in the usual banded form, but, so far as can be determined from surface appearances, not in sufficiently concentrated condition to be of value.

Asbestos.

Small bodies of serpentine occur at a number of points in the Keewatin area between Obushkong and Firth lake. On the east shore of the latter body just opposite the central group of islands, one of these serpentine bodies is traversed by numerous seams of asbestos. Some of the largest are 3 or 4 inches in width, but the material is coarse-grained and brittle. In many smaller ones less than half an inch in width, the asbestos is of good quality.

In conclusion, the writer desires to thank Messrs. Thomas Firth and J. R. Marshall for their intelligent and ready assistance in advancing the summer's field work.

LAKE OPASATIKA AND THE HEIGHT OF LAND.

(Morley E. Wilson.)

The field season of 1908 was spent in that part of the Province of Quebec lying north-east of Lake Timiskaming and adjacent to the interprovincial boundary; attention being more especially directed to the vicinity of Lake Opasatika and the height of land.

In the absence of an accurate and detailed map of the district, a considerable part of the summer was necessarily devoted to topographical work, the Rochon micrometer and surveyor's compass being employed for the purpose. Surveys were made of Lac des Quinze, Barrière lake, the Lonely river and Lake Opasatika, all of which form part of the Timiskaming-Abitibi canoe route. The remainder of the time at our disposal was spent in making a geological examination and survey of the country adjoining the north end of Lake Opasatika; the area investigated extending to the Kekek hills on the east, to Island (Obadowagashing) lake on the north, and to the interprovincial boundary on the west.

PHYSIOGRAPHY.

The country north-east of Lake Timiskaming presents, in general, the characteristically monotonous, low relief of the Laurentian-Keewatin peneplain; a feature further accentuated throughout a great part of the district by the large flat areas of clay which have filled in the depressions in the uneven rock surface. There are, however, a number of very prominent elevations extending along the divide between the waters of the Ottawa and those flowing into James bay. The most westerly of these, known as Shiminis, occurs immediately east of the interprovincial boundary; a second prominence—the Swinging hill—is situated between Opasatika and Island lakes; while the Kekek hills form a third and more extended portion of the series farther east. These have an elevation of from 500 to 700 feet above the surrounding country, and form very conspicuous topographical features in a country otherwise comparatively flat. They all consist of Huronian quartzite or conglomerate and represent residual or monadnock portions of these rocks which the forces of erosion have failed to remove.

The typical Pre-Cambrian hydrographic features are characteristic of the district. The lakes are numerous and irregular in outline, while the streams either meander through muskeg or abound in rapids and waterfalls. The muskeg type of creek, however, owing to the lack of elevation and the predominance of Pleistocene deposits, is much more in evidence, even the smaller streams being navigable by canoe throughout the greater part of their course.

The drainage of the area is almost exclusively into Lake Timiskaming, either by way of the Blanche river (or Rivière), and Lac des Quinze.

GEOLOGY.

Geologically, the area presents the same formational succession, and to a large extent, the same rock types as are found elsewhere in the Pre-Cambrian of the Timiskaming district. Arranged in descending order, the geological succession may be outlined as follows:—

Pleistocene.

Post-glacial: clay and sand.
Glacial: boulder clay, gravel and sand.

PRE-CAMBRIAN.

Post-Huronian.

Diabase, gabbro, granite porphyry.

Lower Huronian.

Conglomerate, greywacke, slate, quartzite.

Laurentian.

Granite, gneiss, pegmatite, aplite.

Keewatin.

Mica schist, green-stone, green schist and dolomite.

It is of interest to note the similarity between the rocks of this area and those described by Mr. R. W. Brock, in the adjoining Larder Lake district. There is this difference between the two localities, however, that while on Larder lake mica schist is a minor Keewatin rock, on the Quebec side of the boundary it becomes the dominant member of the series.

Keewatin.

The Keewatin formation is represented in the area by a complex of both igneous and sedimentary rocks, all of which have reached a more or less advanced stage of metamorphism. Although mica schists predominate in the vicinity of Lake Opasatika, farther north beyond the Huronian hills and the 'height of land,' there are large areas of more basic Keewatin rocks, to the majority of which the general names greenstone and green schist are applicable. The latter usually contain a considerable percentage of lime carbonate, which frequently occurs interlaminated with the schist or as a network of seams traversing the greenstone.

At the base of the Keewatin, and hence, intervening between the acid igneous intrusives of the Laurentian and the upper members of the series, is a remarkably uniform biotite schist. On the weathered surface the rock presents a decidedly rusted appearance, owing to the decomposition of the iron pyrites which it contains. It varies in dip from horizontal in some localities, to nearly vertical in others, and possesses a very decided bedding-like cleavage, the definite and uniform character of which suggests that it owes its origin to sedimentary deposition.

The upper and more basic portion of the Keewatin consists of a great variety of rocks of which chlorite and amphibole schists are the most abundant, but basalt and diabase are also very common. The latter are probably volcanic, sometimes possessing an amygdaloidal structure and frequently showing spheroidal markings and other irregularities in the surface weathering. The green schists are found to occur in the vicinity of the Laurentian granite and gneiss. They comprise chlorite schist, hornblende schist, tremolite schist, and amphibolite, and are evidently products of dynamic metamorphism.

Laurentian.

The rocks of this age in the area are of the typical Laurentian character, the predominating varieties being biotite, gneiss and granite, throughout which, irregular, ill-defined masses and dikes of pegmatite and aplite are distributed. The parallelism in the arrangement of the mineral constituents of the gneiss, while sometimes most

pronounced, is frequently scarcely perceptible. The biotite in the decidedly gneissoid rocks is sometimes segregated into bands varying from minute laminæ up to several inches in width. In a number of localities hornblende was observed to replace the biotite as the ferro-magnesia constituent of the gneiss and granite.

Huronian.

The uneven, denuded surface of the Laurentian-Keewatin complex just described, formed the floor upon which the Huronian clastics were deposited. These, however, owing to later erosion, have been largely removed from the area and are now confined to the series of hills and ridges which parallel the height of land.

The basal member of the Huronian series is a conglomerate, consisting of a fine-grained quartzose to slaty matrix, enclosing numerous pebbles and boulders of granite, greenstone, green schist, chert, quartz, jasper and other rocks. The included fragments are well rounded and are usually small, but in a few localities boulders up to 12 inches in diameter become rather abundant.

While there appears to be considerable variation in the development of the various Huronian rocks in different parts of the area, the same general succession usually prevails. The conglomerate passes upward by a gradual transition from greywacke into slate, which in its turn is succeeded by quartzite. This succession can be observed in a vertical section in both the Swinging hill and Shiminis; the Kekek hills on the other hand, although they reach an elevation nearly as high as either of the former, consist wholly of conglomerate. All of these rocks, wherever the bedding can be observed, appear to be nearly horizontal, the dip rarely exceeding 10°.

Post-Huronian Intrusives.

At a number of points throughout the district diabase or gabbro dikes of Post-Huronian age occur, cutting the Keewatin and Laurentian rocks. A dike of porphyry also occurs between Ollier and Reneauld lakes, intruding Huronian conglomerate. These dikes vary in width from a few inches up to 200 yards, and can sometimes be traced continuously for several miles.

Pleistocene.

The Pleistocene deposits of the area consist largely of stratified clay and sand of post-glacial age, but in some localities gravel and sand, or boulder clay of glacial deposition are to be found. The post-glacial clays and sands are very extensive, especially eastward and southward from Lake Opasatika.

ECONOMIC GEOLOGY.

A considerable amount of prospecting has been carried on during the last few years in the vicinity of Lake Opasatika, which has resulted in the location of a large number of quartz veins throughout the locality. The majority of these, however, are not auriferous, although some of them contain considerable quantities of sulphides, such as chalcopyrite, bornite, pyrite, and sphalerite.

The mining locations of the Pontiac and Abitibi Mining Company, situated about 2 miles north-east of the head of Lake Opasatika, are of special interest because of the similarity of one of the prospects to the gold-bearing rocks of Larder lake. On the shore of Fortune lake an exposure of dolomitized porphyry occurs, which is traversed by veinlets of dolomite and quartz containing sulphides of iron and copper in small quantities. Assays of specimens from this occurrence have yielded high values in gold, but no attempt has been made, as yet, to determine the extent or average value of the deposits.

A GEOLOGICAL RECONNAISSANCE ALONG THE NATIONAL TRANSCONTINENTAL RAILWAY FROM THE ST. LAWRENCE RIVER TO THE INTERPROVINCIAL BOUNDARY BETWEEN QUEBEC AND NEW BRUNSWICK.

(J. A. Dresser.)

In the month of April, 1908, I was instructed to make a preliminary examination of a reported discovery of gold at Marsboro, near Lake Megantic, in the county of Compton, Quebec; and spent nearly two weeks in examining the locality and writing a preliminary report thereof, which has since been published by the Geological Survey. A sketch map, and some valuable observations were contributed to the report by Mr. E. R. Faribault.

In connexion with this published Report No. 1028 (French No. 1032), it should be mentioned that an assay reported by Mr. J. Obalski, Superintendent of Mines of the Province of Quebec, was erroneously quoted as being 'considered by him an average of 17 feet.' whereas Mr. Obalski's was only a hand specimen from a body of rock of that width.

On June 22, I received further instructions to make a reconnaissance survey along the route of the National Transcontinental railway from the St. Lawrence river to the interprovincial line between New Brunswick and Quebec; giving special attention to the economic possibilities, the timber and agricultural resources of the district, and the relations of the Quebec group to the other rocks of this region. After purchasing tents and blankets in Montreal, and engaging men at Three Rivers, I went to Quebec, where the rest of the outfit was procured.

There I was joined by Messrs. A. MacLean, B.A., and R. Randal Rose, a senior student in applied science at the University of Toronto, who acted as assistants throughout the season. It is a pleasure to acknowledge the very efficient services rendered by both these gentlemen.

I would also acknowledge the assistance and many courtesies received from the officials of the National Transcontinental railway, and from many of the contractors, especially Mr. G. W. Bartlett, of Quebec, who aided us in various ways throughout the summer.

Inasmuch as a portion of the section of the National Transcontinental railway from Quebec bridge to New Brunswick was covered by Mr. R. W. Ells' map and report on N.E. quarter sheet of the Eastern Townships map (Geological Survey of Canada, 1887), that part was traversed quickly; only sufficient time being taken to familiarize ourselves with the geological structure, in order to correlate our later observations with Mr. Ells' work, and to note the present economic conditions. The line of the National Transcontinental railway for the first 120 miles being approximately parallel to the strike of the rocks, it was found advisable to carry on our reconnaissance by a series of cross traverses, rather than working altogether parallel to the course of the railway. Accordingly, traverses about 30 miles in length were made along seven lines transverse to the line of the railway; and the intervening country—especially near the railway—was also covered as closely as was found advisable. The length of the section followed was 203 miles. It is known officially as District B of the National Transcontinental railway, and crosses the counties of Lévis, Dorchester, Bellechasse, Montmagny, L'Islet, Kamouraska and Temiscouata.

The country is sparsely settled in the northern part of the section, but it was always found possible to move camp by teams. Except in the vicinity of Pohenaga-

mook, and Long lakes, there are no waterways in this district suitable for canoes, and, owing to the extreme low water of the past season, not even the rivers connected with these lakes could be used for travel.

The camp was broken up September 23, when a day was spent examining the exposures about Lévis and Orleans island; and another day by Messrs. MacLean and Rose at Montreal, completing the material for a map.

DISTRICT.

Location.

This part of the Province of Quebec is chiefly that narrow portion between the St. Lawrence river on the north-west and the State of Maine on the south-east. Throughout the greater part of its length it is between 30 and 40 miles wide, but towards the south-west it widens out with the more southerly deflexion of the International Boundary Line. It is approximately 120 miles from the Etchemin river to the St. Francis river. This gives an area of about 3,600 square miles in the district, but this investigation has been mainly confined to parts of it that have been previously less known, principally along the line of the National Transcontinental railway.

General features.

Bordering the St. Lawrence there is a narrow strip of low land, generally from 4 to 6 miles in width. This is usually between 100 and 200 feet above sea level, and is a narrow extension of the St. Lawrence lowland, which continues from the Lower St. Lawrence to Lake Huron. At the south-east limit of this belt, the land rises in an abrupt escarpment from 600 to 800 feet, and maintains a general elevation of upwards of 1,000 feet for a distance of 15 to 20 miles farther to the south-east. There are many small, deep valleys cutting this area, both lengthwise and crosswise. It, however, preserves a somewhat uniform rolling surface for a breadth of 15 to 20 miles. A series of hills then appears rising to a height of from 300 to 700 feet above the adjacent country, beyond which the surface slopes rather evenly, although with some interruptions, to the St. John river, in the State of Maine, some 20 miles east of the International Boundary.

Drainage.

The district is drained by tributaries of the St. Lawrence on the north-west, and of the St. John on the south-east. The principal rivers which empty into the St. Lawrence are the Etchemin, Boyer, Sud, Ouelle, Kamouraska and du Loup. Those flowing into the St. John are the Daaquam, Noire and the St. Francis. All these streams take their rise in the high central portion of the district. Those flowing towards the St. John are usually larger streams, with more tributaries, and flowing less swiftly than those which empty into the St. Lawrence.

GEOLOGICAL STRUCTURE.

The geological formations represented in this district are arranged parallel to the St. Lawrence river, and are in a broad way successively younger towards the south-east. The oldest consists of a series of quartzites and conglomerates on, or near the St. Lawrence lowland. Above these are the slates and sandstones which form the greater part of the central upland and a part of the lowland along the St. Lawrence. Overlying these are the graphic slates and sandstones along the boundary, which are of still later age. Fossils have been found along the river front in conglomerates interbedded with the quartzites, and their determination, which has not yet been made, is necessary to a more detailed discussion of the geological structure of the district.

ECONOMIC POSSIBILITIES.

Minerals.

With two exceptions the rocks of this district are sedimentary, slates, sandstones and quartzites. The slates are of three different horizons, in two of which they are much shattered. In the latest formation, however, there are beds that appear in every way suitable for roofing and other uses to which slates may be applied. The best of these is on the south-west side of Long lake, in the county of Temiscouata, a quarter of a mile north-west of the point where the Transcontinental railway crosses the lake. Here, the slate in a railway cutting is fine and even-grained, free from pyrite, and splits easily in thin, even laminae, of 3 or 4 feet in dimension. It is very favourably situated, both for quarrying and transportation. Similar occurrences may be found for a short distance along the lake, farther to the south-eastward.

Much of the sandstone is of the green and reddish varieties common to the Sillery formation in which it occurs. This is largely used in Quebec city for building stone. It may be obtained at many points throughout this district when economic conditions bring it into demand.

The quartzite is best exposed in the vicinity of the St. Lawrence river, especially near Kamouraska bay. It is often nearly white in colour and exceptionally free from iron rust, or other stains. It is occasionally used for building stone, and an attempt to employ it for glass manufacture seems to have failed only from adverse market conditions at the time.

Igneous rocks occur at several small hills of diabase in the county of Bellechasse, north-west of the village of St. Lazare; and in larger areas of diabase and serpentine in the south-western part of the counties of Bellechasse, Montmagny, and L'Islet.

The diabase at St. Lazare seems to form an interbedded sheet and occasionally shows a few grains of chalcopyrite. As similar rock under like conditions, to the south-west of this district, at Nelson, St. Flavien, Drummondville, Wickham and Roxton, has produced certain amounts of rather high grade copper ore, these hills were examined carefully; but no copper was found.

The diabase serpentine areas promise to become more important. The diabase, at least, has been intruded through the sediments (Sillery) at the north-west of it, and so is of later age. In range V of Talon, in the county of Montmagny, there is a considerable body of serpentine, probably a mile in width. Asbestos of short fibre was seen in it, but no detailed examination could be made in the time at our disposal. The country is densely wooded, making the extent of this igneous belt difficult to determine; but the area that it seems most important to prospect is one about 12 miles long, by 2 or 3 in width, lying largely between the L'Islet and the Montmagny roads. This is chiefly in ranges V and VI of Rolette, III, IV and V of Talon, and I and II of Leverrier.

Besides this, there is a series of detached hills continuing in the same general trend for 15 miles farther to the south-west, in the vicinity of St. Fabien and St. Magloire.

Copper pyrites was found in loose blocks of diabase having the lithological character of the rock of much of these areas, but it was nowhere found in place.

This entire series of eruptive hills lies to the south-east of the second ridge mentioned in the early part of this report, hence is not easily accessible from the National Transcontinental railway. The projected extension of the Quebec Central railway from St. George de Beauce by way of St. Justine, will probably pass through the length of this area.

Aside from the above there are no indications of any metallic values in the district, save some deposits of bog iron ore which are probably of no great extent. A reported deposit of galena in the township of Woodbridge, near St. Paschal on the Intercolonial railway, does not seem to give promise of any importance. It was thus

described by Mr. J. Obalski, Superintendent of Mines for the Province of Quebec, who saw it when it was probably in better condition to examine than at present: 'There is a small vein of sulphate of baryta, with a little calcite of two to three feet in thickness which may be followed for a distance of an acre and in which an opening of some 15 feet has been made. A little galena in fine grains is disseminated through the mass, but in too slight a proportion to be worked industrially as it represents not more than ten per cent of the mass.' A picked specimen of this galena was assayed by Dr. M. L. Hersey, with the following results:—

Galena=45·2 per cent; silver=traces.

Except for some peat bogs in the north-western part of Kamouraska, no other mineral products of possible economic importance are known in the district.

Timber.

The lowland along the St. Lawrence has long been settled, and no forest remains. But the middle upland, and the south-easterly slope of the St. John valley, are generally well wooded, especially in the northern part of the district. The valleys and low lying land are timbered by spruce; the hills by a mixed growth of spruce, and occasionally of hemlock, with maple and birch. In the northern part of Kamouraska, pine appears in some quantity.

Much of the land is under lease for lumbering purposes and some of the limits are evidently carefully treated; the cut being regulated to allow of a succeeding forest growth. In others less care is taken.

Logs and pulpwood are driven, when possible, in the various streams to mills situated near the St. Lawrence, and down tributaries of the St. John, generally to Fredericton, N.B.

In the middle upland the streams are often too small to carry log drives. Consequently, much of the timber that is cut in clearing the land for settlement is burned on the ground. This waste will, however, cease when the Transcontinental railway, the course of which follows this belt of the district, is completed.

Agriculture.

In the older settled land along the St. Lawrence, better conditions of agriculture prevail. But in the settlements of the upland, which are confined to a small portion, generally along the Taché road which runs parallel to and a few miles south-east of the National Transcontinental railway, the farming is on a small scale and of a primitive character. The live stock here raised is of the poorest type and dairying is only partially organized. The lack of easy access to a railway has been the main cause of these conditions. Although the Provincial Government has built roads from the St. Lawrence lowland nearly or quite to the Maine boundary, at intervals of 10 to 20 miles, and has connected these by means of the Taché road during the past 50 years, the settlements have advanced very little. The escarpment dividing the lowland from the upland, makes the hauling of supplies or produce a heavy tax on the farmer's resources, in fact, on some of the roads, a prohibitive one.

The soil on the upland is light and is often heavily covered with boulders. Yet excepting a belt two to five miles in width along the north-west margin of the upland, which is little but a glacial moraine on a rock shelf, this section when cleared will be well suited for dairying and, with railway communication, much of it will admit of small mixed farming under favourable conditions. The land on the slope of the St. John valley is much better. The soil contains more clay and less boulders.

I found the idea prevalent amongst many people not native to the district that, many farms had been abandoned owing to the impossibility of the owners gaining a livelihood. But a careful investigation does not show this to be the case. Many so-

called abandoned farms are homesteads begun in leased timber berths, which the holders of the berths have bought in order to protect their limits against mutilation and the danger of fire. In other cases, land seems to be taken ostensibly for colonization purposes, the minimum of settlement duties being performed, and the land stripped of its timber for pulpwood. When this is done, the land is abandoned for taxes and considered an abandoned farm.

When, however, all its possibilities are considered, this district may be considered, unless for a slightly shorter season, very similar in its agricultural possibilities to the counties of Megantic, Arthabaska, Richmond or the hilly portion of Shefford and Brome, where mixed farming has been successful, and dairying pre-eminently so for many years.

SUMMARY REPORT ON A DISTRICT NEAR BATHURST, N.B., AND ON THE REPORTED OCCURRENCE OF GOLD IN THE TOBIQUE COUNTRY, VICTORIA CO., N.B.

(G. A. Young.)

INTRODUCTION.

Mining operations having been commenced on a large body of iron ore lying near the Nipisiguit river at a point about 21 miles south-west from the town of Bathurst, New Brunswick, the writer received instructions to begin work on a topographical map and to study in detail the geology of an area extending sufficiently far inland from the sea to include the ore deposit. The boundaries of this proposed sheet lie within the confines of two geological sheets known as 3 S.E. and 2 N.E., of the regular series of geological maps of New Brunswick, published on a scale of 4 miles to one inch, by the Geological Survey, and of which the two referred to were prepared by Mr. R. W. Ells.

TOPOGRAPHY.

Owing to various causes the topographical work progressed slowly, and during 1908 field work was confined to the northern portions of the sheet where it fronts on Chaleur bay, between Belledune river on the west and Tetagouche on the east. The part of the district already examined may be described as a tilted plain gradually rising from the sea, until at distances of between 5 and 10 miles inland, it attains elevations of 500 to 600 feet. Four main streams cross the area and occupy marked depressions affording many rock exposures, but elsewhere bed-rock is largely concealed, either by deposits of soil, sand and gravel or by glacial debris.

GENERAL GEOLOGY.

The greater part of the district is underlain by sandstones, shales and slates, probably for the most part of Silurian age; but near Belledune, and again near the Tetagouche, younger igneous rocks outcrop over considerable areas, while dikes of dark basic varieties are everywhere common. Younger than the above are certain limited patches of conglomerate, sandstone and calcareous beds virtually confined to the coast and supposed to be of early Carboniferous age.

The igneous rocks, while apparently all intrusives, vary widely in composition and appearance; at times they are light coloured and approach the granites in appearance, but more commonly they are dark, basic porphyrites and diabases. In the neighbourhood of Belledune the igneous varieties occupy almost exclusively an irregular area a number of square miles in extent, and at times are intricately associated with gneissic and schistose derivatives of the sedimentary beds. To the south, approaching the Tetagouche, dark basic rocks, probably diabases, form a number of relatively wide, dike-like bodies.

The sedimentary strata, which occupy by far the larger part of the district, have a general strike of about east and west. Different lithological varieties have a tendency to occur in bands paralleling the strike, so that along the coast between Belledune river and Elmtree river, where the shore has a general easterly trend, the beds consist largely of sandstones with associated shales, limestones and heavy conglomerates, while inland these are succeeded by a group of sandy measures that appear on

or near the coast east of Elmtree, where the shore pursues a southerly course. A third zone, inland and south of that occupied by the sandstones, is composed largely of black shales and slates. These form a wide band extending to the eastern boundary of the sheet.

The strata appear to lie in a series of close folds, at times, at least, overturned; while faulting is prevalent and some of the dislocations are of considerable magnitude. The individual beds are frequently much deformed, are frequently contorted, broken and pulled apart, while locally they often assume a schistose condition.

The limestone beds of the northern portion of the district are fossiliferous, and from a preliminary examination of several collections Mr. H. M. Ami has pronounced the beds of Silurian age, and to be probably from a horizon about equivalent to the Clinton of the New York series. In the field all the sedimentary strata appeared to compose one conformable series with the fossil-bearing limestones in the lower portion of the column. Considering the complexity of the geological structure, the number of exposures within the area examined was very limited, and it is possible that when the work is completed and compiled, the evidence may be interpreted differently. Beds bearing Ordovician graptolites are known to occur south of the district, and it is not impossible that at least a portion of the strata now believed to be of Silurian age may prove to belong to the Ordovician over some such area as shown on the original map of the district.

ECONOMIC GEOLOGY.

The sedimentary rocks of the interior of the country, and more particularly the dark slates, are in many places very rusty weathering as the result of the presence of iron pyrites, either in the form of small grains or occasional larger crystals. Quartz veins, usually narrow, are exceedingly numerous and are especially common in zones in the more rusty weathering bands of the dark slates. Frequently these veins are composed solely of milk-white quartz, but at times they contain small amounts of iron pyrites or occasional grains of galena or zinc blende or both together. On the Elmtree river, at a point about 3½ miles above its mouth, there occurs a zone some 6 feet wide of shattered and altered slates, richly impregnated along veins, seams and in patches with galena and zinc blende accompanied by much iron pyrites and some quartz and calcite.

A deposit of iron ore occurs on the eastern side of a brook flowing into the Millstream at a point about 9 miles above its mouth. The ore body is situated about 1½ miles up the tributary which flows south into the Millstream. The deposit forms the side of an abrupt rise in the ground of about 50 feet, and is imperfectly exposed at intervals over a distance of about 1,200 feet, with at one point a maximum breadth of about 30 feet. The ore seems to form a very flat, lense-like body conforming in strike and dip with the neighbouring sedimentary beds which have a general east and west strike, while they dip at high angles of between 60 and 90 degrees towards the north.

The deposit where it seems to attain its greatest width has been stripped and there shows a symmetrical development from the sides towards the centre. The country rock is almost entirely concealed, save in the immediate neighbourhood of the ore body, where it appears to represent hardened, silicified, sandy shales and fine sandstones, and those near the ore body contain irregular streaks and bands of pale greenish, finely granular garnet. At the margin of the ore body, short streaks and lines of fine granular magnetite appear lying in a garnetiferous matrix, the whole having a distinctly banded appearance. In a general way the amount of iron oxide gradually increases towards the centre of the mass, but bands, largely of garnet, reappear at intervals. Towards the centre of the body the ore consists very largely of magnetite, but with much feldspar and garnet. Through the whole mass iron pyrites is abundantly though irregularly disseminated, either in small lense-like patches, with some quartz,

or in large and small aggregates of grains, or in single grains. Besides the abundant garnet, vesuvianite, actinolite, epidote and altered chalcodite occur sparingly.

The general relations of the deposit with the surrounding strata, viewed in connexion with the possible Silurian age of the measures, pointedly suggest that the ore body formed at the same time with the enclosing sedimentary beds, and that originally it was of the same general character as the beds of manganiferous hematite of the Silurian of the St. John River valley and the bordering State of Maine. The sulphide probably originated in the same fashion as the widely distributed pyrite of the country rocks of the whole district. The garnets, in part at least, are younger than the pyrite grains, since the latter are sometimes enclosed in individual crystals of garnet.

The garnet, vesuvianite, etc., minerals essentially of metamorphic origin, need not necessarily have been produced at the time the iron oxide first was localized, but may have been due to local causes, perhaps connected with the neighbouring igneous dikes, which, both large and small, are very numerous in the district. Possibly, however, the ore body should be classed as a true metamorphic contact deposit and be considered as having formed later than the enclosing strata, since nowhere else in the district are the sedimentary beds so highly changed, nor were secondary minerals like the garnet and vesuvianite seen anywhere else.

The ore body lies near the eastern limits of the map sheet, and just beyond the borders of the area fragments of similar ore were observed over a distance of several miles. Though not seen in place, this float material seemed to point to the existence in their neighbourhood of other like deposits of iron ore. Since no indications of specially favouring conditions were observed, it is not impossible that other bodies of iron ore occur within the area already examined, though if such are present they are probably concealed from view by drift.

TOBIQUE COUNTRY.

At the close of the season's field work in the Bathurst district, a brief visit was paid to the Tobique country in Victoria county, N.B., in connexion with the reported occurrence of gold in that district. Through the country various stories are current regarding the finding of gold in the district twice during a period of over half a century, but all versions agree in stating that in neither case did the supposed discoverer reveal even the approximate locality from which he had procured his gold specimens. The general consensus of opinion locates the supposed discoveries in a territory over 100 square miles in extent, lying in the angle formed by the Serpentine river and the headwaters of the Nipisiguit, and one possible reason for this general belief may be due to the fact that a few colours can be recovered from the gravel bars of the Serpentine river. From time to time the mining rights to certain tracts of land in this district have been granted, but as far as the present writer is aware, no systematic prospecting has ever been done.

The country is not one favourable for prospecting in nor for rapid geological work, since even in the beds of streams and on steep hillsides bed-rock is but rarely exposed, while the district being still unsettled and thickly timbered, the finding of rock exposures is largely a matter of chance, unless unlimited time is afforded for a systematic search. The district, however, by reason of lumbering operations, is readily accessible, and its general geology is not unfavourable to the occurrence of mineral deposits, perhaps including gold. The country lies between the large areas of granite, presumably Devonian in age, of the interior of the Province, and the Silurian sediments and associated igneous rocks, both intrusive and extrusive, that occupy so wide a territory in the St. John River valley and in Maine. This territory is partly underlain by schists and gneisses which previously have been assigned to the Ordovician and Pre-Cambrian, though possibly they are metamorphosed equivalents of the Silurian.

BITUMINOUS SHALES OF NOVA SCOTIA AND NEW BRUNSWICK: WITH NOTES ON THE GEOLOGY OF THE OIL-SHALES OF SCOTLAND.

(R. W. Ells.)

The first part of the season, or from the end of May to the middle of August, 1908, was spent partly in an examination of the oil-shales of Scotland, with a view of comparing them with those of New Brunswick and Nova Scotia, and of making an investigation of the oil-shale industry of that country, which is very large and important; and in superintending the distillation of a shipment of oil-shale amounting to between 40 and 50 tons, which had been sent from Baltimore, Albert county, N.B., to Glasgow in March, 1908, in order that a commercial test should be made to ascertain the economic value of the material, especially as related to the contents in crude oil and sulphate of ammonia.

This work was successfully carried out in the experimental retort belonging to the Pumpherston Oil Co., located at Mid Calder, about 12 miles west of Edinburgh. The detailed report by the chief chemist of the company has been handed to Dr. Eugene Haanel, Director of Mines, and will appear in the Annual Summary Report of the Mines Branch for the fiscal year 1907-8.

THE GEOLOGY OF THE OIL-SHALES IN SCOTLAND AND CANADA.

The geological position of the Scotch oil-shales, when compared with those found in New Brunswick and in Nova Scotia, corresponds very closely. Those from which the oil is now produced are apparently on the same horizon as the Albert shales of New Brunswick, while the horizon on the Torbane Hill mineral, once worked in Scotland, is apparently identical with that of the Stellarite of Pictou county in Nova Scotia, belonging to the Middle Carboniferous, or base of the Coal Measures proper.

The position of the oil-shales and their associated rocks in both countries is below the Lower Carboniferous marine limestones, and above the recognized Devonian in Scotland. In eastern Canada they are unconformably beneath the limestones, and appear to form an upper member of the Devonian, belonging to the Perry formation of New Brunswick. In Scotland the formation is known under the name Calciferous Sandstone series.

In Scotland these oil-bearing rocks are well developed to the west and north of Edinburgh on both sides of the Firth of Forth, and mining operations have been carried on in many parts of the field. In general character the shale formation resembles closely the same formation in New Brunswick—in the frequently brownish or chocolate colour, the texture and association of ochreous dolomitic or iron stone bands, and in the presence of the remains of fishes which in certain bands are very abundant. The oil-bearing bands in the Scotch shales differ from those found in the New Brunswick shales; for while both are high in oil and ammonia contents, the Scotch bands are chocolate brown and softer than the containing shales. They can be readily cut with a knife, being practically free from gritty matter, but have the characteristic bituminous odour; while the New Brunswick oil bands are much darker, often a dark brownish black, more massive and harder than the ordinary shales, tough, and break with a marked conchoidal fracture. Like the beds of the Scotch shales they vary in oil contents as well as in sulphate of ammonia in different bands, and even in parts of the same bed. In the freshly mined rock the New Brunswick shale is

much more massive than the Scotch shale or even than the main mass of the associated shale, which often has a thin and papery structure; but is nevertheless a shale, as can be seen on weathered surfaces of the oil-bands, and this shaly character is also developed to some extent in the retorting. Owing to this generally more massive character the Scotch experts were at first inclined to the view that the New Brunswick material furnished for the test was not a true shale, as compared with the material with which they are familiar.

The New Brunswick oil bands ignite easily in splinters kindling readily from the flame of a match, burn freely in the grate, producing a long yellow flame with great heat, generate steam quickly under boilers; but yield a large percentage of ash which unfits the material for a good fuel, so that, except for experimental purposes, it has, as yet, been but little employed for economic use. With the exception of the large percentage of ash in composition, however, it should be available in many cases as fuel. It burns like cannel, giving off gas spurts in the grate, and was for a time regarded as a variety of this coal.

The Scotch shales used for oil are known by the terms 'plain' and 'curly.' The associated or less bituminous portions are known under the name of 'Blaes.' All these varieties are found in the New Brunswick deposits. Of these the kind known as curly is regarded as the most valuable, being as a rule much richer in oil than the plain. Both varieties sometimes occur in the same bed, and the yield of oil varies from point to point in the working. In the curly variety, possibly the greater percentage of hydrocarbons may render the material softer and more easily crumpled than the stronger but poorer bands associated with them.

These Scotch oil-shales are, as stated, almost entirely free from gritty matter, do not dull the edge of the knife, and can be readily tested by the teeth. The Blaes varieties, on the other hand, show the presence of gritty material very perceptibly, do not shave easily, and on weathering crumble readily, and pass into muds. The rich shale, however, resists weathering, and practically remains unchanged by exposure to the weather on the dump for some years with but small loss of oil contents. It will be seen, therefore, that the physical characters of the New Brunswick shales are somewhat different from those used in the Scotch industry, though there is a general resemblance between the two formations.

The great value of the Scotch shale does not, however, depend entirely upon the percentage of the contained oils, as now mined, but largely on the presence of other substances, such as paraffin, sulphate of ammonia, etc., while the resulting oils from the retorts are fractionated into various grades of burning, lubricating, and fuel oils; naptha, tars, etc. The percentage of crude oil now obtained from the Scotch shales has materially decreased in recent years, and now rarely exceeds 25 to 30 gallons per ton; but shales low in oil are used somewhat extensively, since the industry has shown that, often the shales poor in oil contents are richer in sulphate of ammonia. This is a very important point in estimating the scale of profits, owing to the importance sulphate has obtained through its extensive employment as a fertilizer in agriculture. The yield of paraffin is also an important factor.

The thickness of the workable beds varies very materially in the same field, and even in different parts of the same bed. They range from a few inches to sometimes 6, 8 and even 10 feet, and at one place a thickness of 15 feet is recorded.

Like the New Brunswick shales, the strata are often thrown into folds which bring different portions of the oil bands to the surface at various points, and they are also affected by numerous faults. Some of the Scotch workings have been mined to a depth of over 1,000 feet; the mining being carried on much after the fashion of mining beds of bituminous coal. All the workable areas have been proved by systematic borings, usually with the diamond drill; the cores from which are carefully logged and kept for reference. In all attempts to prove the number of beds, their thickness and extent, this method of core drilling is considered most important as regards future development, and is one of the first things attended to. In the New Brunswick areas,

where the shales are concealed over large areas by drift or by overlying newer formations, such preliminary work is an absolute necessity to obtain suitable locations for plants, or a correct estimation of the economic value of the several portions of the field.

In a folded and faulted area, the actual position and extent of the several seams cannot be ascertained from limited and scattered outcrops alone, and estimates of quantities made under such conditions will be merely conjectural. In the case of the Scotch drillers, so carefully have the logs of the numerous holes been kept, and so well are the positions and nature of the several oil shales known, that in many cases any particular seam met with can be readily recognized, and its horizon established. It is greatly to be regretted that in all the borings made on these shales in New Brunswick no such careful recording of the drillings has ever been attended to.

OIL-SHALES OF NOVA SCOTIA AND NEW BRUNSWICK.

After my return from the shale tests carried out in Scotland, nearly two months were devoted to a careful examination of the shale deposits of Nova Scotia and New Brunswick, in order to ascertain more closely their probable economic values in oil and sulphate of ammonia; and several deposits, other than those already known to exist, were located.

On these up to the present time little work has been done. At several points, as at Lake Ainslie and McAdam lake, in Cape Breton, boring for native oils has been carried on in a desultory manner for some years, but without much apparent success, and the sites even of most of the borings have been obliterated. At Stellarton, in Pictou county, on the discovery of the mineral stellarite some 50 years ago, its value as a producer of crude oil was ascertained, and a quantity, stated to be about 4,000 tons, was raised and shipped for treatment abroad, part of which went to the United States; the value of the material at that time being stated as $8.35 per ton at the place of shipment. Owing to its high yield in gas this material was evidently largely employed as an enricher of bituminous coals in the process of gas making. Work on this area was discontinued shortly after the finding of the native oils of western Ontario.

In the examination of the several shales, the simple tests by ignition, and by the knife, were applied with varying results, some portions kindling readily from a lighted match; and certain portions in both Provinces were found to be excellently adapted for distillation on a large scale. For this purpose it may here be said that practically the greater part of the rich shale areas in eastern New Brunswick has been secured by a company, and arrangements are already being made to establish a plant in this Province to work these shales on a commercial basis.

In New Brunswick the belt of bituminous, or as they are generally styled, Albert shales, is well exposed in that part of Westmorland county between Memramcook river, near Upper Dorchester, and Petitcodiac river, between Dover and Beliveau.

Crossing this river into Albert county these shales are at first concealed by Lower Carboniferous rocks, in which gypsum is very abundant, but they reappear at the Albert mines, about 5 miles to the west of Hillsborough. They here lie against the flank of Caledonia mountain, and can thence be traced, with several gaps, to the western limit of the county near Elgin. Beyond this they continue through Kings county south of the Intercolonial railway for some miles, being well seen at a number of points to the south of Sussex and Norton, but disappear between Apohaqui and Hampton.

In Nova Scotia the shales are somewhat different in character, the brown bituminous beds being apparently represented by black and dark coloured beds. The beds richest in oil belong to a higher horizon, and form a portion of the Coal Measures, or Middle Carboniferous. The black shales are well exposed in Hants county, between Hantsport and Avonport, on Avon river, and on the coast from Cheverie to beyond Walton on the south side of Minas basin. They have often a jet black colour, but do

not readily ignite; no analyses have been made to determine the percentage of hydrocarbons. The shales occur in great quantity at several points, and reports of their capacity for oil have been given in a paper by Mr. J. Campbell, in How's Mineralogy of N.S. (1868). In this, Mr. Campbell states that 'the bituminous beds appear to be divided into two groups, the lower of which appears to be about 70 to 80 feet in thickness, 20 feet of which may be regarded as good oil shale, including 5 feet of curly cannel rich in oil. The upper band, which lies in immediate contact with the limestone, cannot be much short of 150 feet in vertical thickness of strata, containing a large percentage of oil. Of this great bed of oil-batt, about 30 feet will in all probability yield from 20 to 25 gallons crude oil to the ton. The 5 foot seam of curly cannel will yield at least 40 gallons crude oil to the ton, and the 15 feet of the best section of the oil-batt will yield at least 20 gallons to the ton.' On the assumption that these figures are reasonably correct, the amount of oil obtainable from this great body of shale is of great importance, and the area is well worthy of careful testing. The basin in this part should contain some 50 feet of strata rich in oil. It may be added that no attempt has yet been made to ascertain the actual value of these oil-bearing strata.

In the vicinity of, and a short distance north of Truro, Mr. H. Fletcher reports the presence of large bodies of these black shales, but no attempts have yet been made to establish their percentages of oil, or sulphate of ammonia.

Farther east, in Pictou and Antigonish counties, large deposits of black shales occur. As regards the deposits near Stellarton, reference has been made to them in How's Mineralogy. Some statements there given are worthy of careful consideration, and may be reproduced since this volume is out of print and copies are rarely to be found.

Of the oil-coal at this place, Dr. How remarks:—

'I believe this material was first examined and described by myself in a paper published (Silliman's Journal and Edinburgh Phil. Journal), in 1860, soon after it had been opened up by Mr. Fraser. It has been called the stellar coal from the fact of 'stars of fire' dropping from it when it has been held to a flame and removed. The seam in which it is found is called the stellar seam. As the well known minerals analogous to it, in the leading property of furnishing much oil, have been distinguished from coals by the special names torbanite and albertite, this might be designated stellarite. It occurs with bituminous coal in a seam 5 feet thick, of which 1'-10" are stellarite, 1'-4" bituminous coal, and 1'-10" bituminous shale: the composition of the three bands is shown by my analysis to be as follows:—

	Coal.	Stellarite.	Shale.
Volatile matter	33·58	66·56	30·65
Fixed carbon	62·09	25·23	10·88
Ash	4·33	8·21	58·47
Moisture	0·23		
Sp. gr.	1·103		

The oil-coal, or stellarite, has been examined abroad with quite analogous results; the mineral improves towards the east, while the overlying McGregor coal deteriorates in that direction. Other analyses have given the following results, the No. 2 is probably the shale, No. 1 being stellarite:—

	No. 1.		No. 2.	
Moisture	·20	·32	·80	·60
Volatile combustible	67·26	68·38	34·16	38·69
Fixed carbon	24·03	22·35	12·30	8·26
Sulphur	·11	·05	·74	·25
Ash	8·40	8·90	52·00	52·20
	100·00	100·00	100·00	100·00
Sp. gr.	1·069	1·079	1·612	1·568

On a further comparison of these shales with cannel coals, Dr. How gives the following results, the ratio of carbon to hydrogen for the following minerals being:—

Cannel coal, from Wigan	100 to 5·65
" " Leshmahagow	100 to 8·71
" " Capeldrae	100 to 10·05
Torbanite, Scotland	100 to 12·43
Albertite, New Brunswick	100 to 10·85
Stellarite, Pictou, N.S.	100 to 12·43

and he says that 'theoretically they should be excellent oil-coals, as is abundantly proved by experience. For the following amounts of oil, yielded by various materials, I am indebted in part to Mr. Poole, formerly manager of the Fraser Oil-coal Works, where the stellarite was used, and in part to Mr. Hoyt. I have myself tried none of them for the production of oil.

Union oil-coal, of West Virginia, affords	32	gals. crude oil per ton.
Elk River oil-coal, of West Virginia, affords	54	" "
Kanawha oil-coal, of West Virginia, affords	88	" "
Leshmahagow cannel, Scotland, affords	40	" "
Albertite, New Brunswick, affords	92 to 100	" "
Torbanite, Scotland, affords	116 to 125	" "
Stellarite or Stellar coal affords	50	" "
Stellarite or Stellar coal No. 2, affords	50, 60¾, 63, 65, 74	" "
Stellarite or Stellar coal, No. 1, affords	123 to 126	" "

Picked samples gave, in Boston, 199 gals.

'Some of these are the amounts yielded by careful experiments on a small scale. When oil was made at the Fraser mines, in 1859, the practical result was about 60 gals. crude, and from 30 to 35 gals. fine clarified oil to the ton.'

By reference to the recently published map of the Pictou coal field, by Dr. H. S. Poole, issued 1904, the presence of this oil-coal may be seen noted at a number of widely divergent points, so that it is evident that the material must occur in large quantity. The mining of the mineral was stopped on the discovery of the abundant supplies of mineral oil in the United States, about 1860.

In view of the great prospective value of the stellarite, or oil-coal of this district, the following data, taken from Dr. How's paper in Silliman's Journal (1860), may be added:—

'The oil-coal found near Pictou, N.S., was first met with by persons residing in the neighbourhood, early in 1859, and its exact locality is called Fraser mine. It occurs in the Coal Measures. I am indebted to Henry Poole, Esq., manager of the Fraser mine, for the following particulars relating to the geological position, etc., of the substance.

'The lowest measures, about 60 yards, on the surface, short of the distance where the oil-coal outcrops, are composed chiefly of strong bands of sandstone, actual thickness not yet proved; then shales with bands of ironstone, and stigmaria roots with sigillaria stems, and a few detached fern leaves in such soft shale that I have not been able to preserve any good specimens. Immediately above the oil-coal is a seam of bituminous coal about 14 inches thick. Where we commenced to open a mine by driving a slope, the oil-coal was 14 inches thick, but at 200 feet down, at the bottom of the slope, the oil-coal was 20 inches thick; it has a smooth regular parting at the top next the coal, as also at the bottom next the oil-batt below, but throughout its entire thickness it is of a curly twisted structure; many of its fractures look like the casts of shells, and the sharp edges are polished, of a slickensided character. No fossils that I am aware of have yet been found in the curly oil-coal. The oil-batt next below is nearly 2 feet thick, of a homogeneous character with a slaty cleavage of various thicknesses. In this band two or three varieties (species) of lepidodendron beautifully preserved have been found, also leaves about one-fourth of an inch wide and in lengths of from 4 to 6 inches, which have undergone so little change, that when the damp shale was fresh split they could be removed, and were so elastic that

they could be bent considerably without breaking. At the bottom of the slope another thin seam of curly oil-coal has appeared of a few inches in thickness, but it is not worked at present. In the roof-coal were found pieces of decayed wood very little changed, which I consider a great curiosity. On McLennan brook, shale is above the oil-coal and oil-batt below, in which have been found lepidodendra, and apparently molar teeth with three fangs, flattened modiola shells, and spines or small fish teeth. The oil-batt has been found in several places without the curly band or so-called oil-coal. Two thousand tons of oil-coal have been raised (December, 1859), at the Fraser mine.

'The oil-coal varies in colour from brown to black, is dull where not polished as just mentioned, has a reddish-brown, lustreless streak, its powder is dark chocolate coloured, it is very tough and breaks at last with a hackly fracture, its specific gravity in mass, after the vessel of water containing it had been in an exhausted receiver, is 1·103. It takes fire very readily, and when removed from the lamp, still burns for some time with a brilliant smoky flame, and flaming melted fragments continually drop from it in a truly characteristic manner. Ignited in coarse powder, in an open crucible, it gives off abundant smoke and flame, then seems to boil quickly, and a coke is left of the bulk of the original material, showing, when turned out, a complete cast of the interior of the crucible. The ash of the coke is grey, and consists mainly of silicate of alumina; at least no lime, or a mere trace, is dissolved by acid, while some alumina is taken up, and a great deal of solid remains undissolved. The powdered oil-coal, digested with benzine and with ether, does not more than sensibly colour these fluids, but some residue remains on evaporation, in each case.

'The bituminous coal occurring with the oil-coal has the usual characters belonging to the species; it is black, brilliant, and very brittle. The proximate analyses of the two are placed side by side; and it will be obvious at once that they contrast very strikingly.

	Oil-coal.	Bitum. coal.
Volatile matters	66.56	33.58
Fixed carbon	25·23	69·09
Ash	8·21	4·33
	100·00	100·00

'The following is the ultimate analysis of the oil-coal, for which I am indebted to Mr. Slessor, assistant to Prof. Anderson, of Glasgow, whose aid I requested from want of the necessary apparatus:—

Carbon	80·96
Hydrogen	10·15
*Nitrogen (by loss)	0·68
Ash (as above)	8·21

'The oil-batt appears to be decidedly a shale, and a specimen from Bear brook, Fraser mine, gave the following results:—

Volatile matters	30·65
Fixed carbon	10·98
Ash	58·47
	100·00'

The practical yield of oils will vary according to the manipulation, the perfection of the manufacturing processes, and the quality of samples employed, but the following statement of the comparative amounts of oil afforded by some of the above may be taken as a good illustration.

In Scotland the Leshmahagow cannel coal gives 40 gallons crude oil and 32 gallons rectified oil per ton.

The Fraser oil-coal at McLellan brook gives 40 gallons crude oil per ton.

The Fraser oil-coal and oil-batt at Coal brook, together give 53 gallons per ton.

* With oxygen and sulphur?

The Fraser oil-coal at McCulloch brook gives 77 gallons per ton.

The Albert coal, or albertite, gives 100 gallons crude oil per ton.

The Torbane Hill coal gives 125 gallons per ton.

It will thus be seen that in Pictou county, where these shales outcrop at several points, and in large extent, the possibilities of successful development are such as to merit careful experimenting.

Going east to Antigonish county, Dr. How, in the paper already quoted, reports a 5 foot seam of curly cannel which will yield at least 40 gallons of crude oil to the ton, and 15 feet of oil shale which will yield at least 20 gallons.

In the recent examination of these areas, near Big Marsh, about 9 miles north of Antigonish town, extensive outcrops of very black shales were seen, with others grey and reddish. With these black shales are beds of coal, somewhat impure, yielding a large percentage of ash. The black shales do not all kindle readily, but some portions burn freely, and should contain sufficient hydrocarbons to be of value for distillation. These are probably the shales referred to by Mr. Campbell, already noted. They have not been tested, but are similar in character to those of Hants county, and are worthy of careful examination.

In Cape Breton also, similar shales, black and supposed to be oil-bearing, are found at several points. They have been bored for oil around the north end of Lake Ainslie, and at McAdam lake, the latter about 12 miles west of Sydney. Though no success has yet attended the oil-borings, the character of the black shales, and their ready ignition at certain points, indicates a prospective economic value, and certain of these deposits are worthy of being tested as soon as provision is made for this kind of work.

Various reports and papers have been written relative to the value of these deposits, but prior to the recent test in Scotland, nothing specially definite could be stated as to their actual value. In New Brunswick, as in Pictou county, N.S., attempts to utilize certain of these deposits at Baltimore were made about the same time as the opening of the stellarite beds, or between 1860 and 1864. A plant was erected at Baltimore, which was in operation for several years, and produced, even with the crude plant of that early date, a good quality of oil, the reported yield by the retort being given as 60 gallons per ton.

Unfortunately all records of the works at that time have been lost, some of them in the St. John fire of 1877, while the plant has long since been entirely removed. Several thousands of tons of the rich oil-shales from the Taylorville area in the eastern portion of the field were also shipped to the United States, at an early date, for distillation, but with the crude appliances of that time they could not successfully compete with the great supplies of native oil produced in the United States and Canada. The enterprise was, therefore, soon abandoned as being unprofitable, but even with the somewhat crude plants and methods of 50 years ago, an excellent quality both of burning and lubricating oil was produced and found a ready market.

At that date also it may be said that the Scotch industry was only passing through the experimental stage, and numerous failures of companies engaged in the business are recorded.

The investigations of the past season on the oil-bands have shown these to be numerous and of great prospective value as a source of supply for crude oil and sulphate of ammonia, as well as for paraffin wax. In New Brunswick, of the principal areas examined, the most readily accessible at the present time are at Baltimore, Albert Mines and Taylorville, the latter on the shore of Memramcook river, in Westmorland county.

In all these places the several outcrops of oil-shale were uncovered, with the following results:—

At Taylorville, the area of shales exposed is somewhat limited, owing to overlying beds of later date, including the Lower Carboniferous and Millstone-grit. About 45 years ago a considerable quantity of the oil-shale was mined, aggregating several

thousand tons, and shipped to the United States for distillation or for gas making, the records of which are not now to be had. Recently the area was examined by Mr. James Robertson, of Albert Mines, on behalf of this Department, and the Albertite Oilite and Cannel Coal Co., and four beds of very fine quality were uncovered. Of these two measured 22 inches each in thickness, the third 36 inches, and the fourth 60 inches. These equally in character the best found in the Albert County areas. Being all situated close to water, and within a mile or so of the Intercolonial railway, they are easily accessible, and should be of great value for future operations.

At the Albert mines, which were formerly the seat of the great albertite industry, the oil-bands outcrop along the course of Frederick brook. These were also opened by Mr. Robertson, under our direction, and at least six were uncovered in a distance of about a fourth of a mile along the stream. Of these No. 1, the most easterly, was opened some years ago, in a small quarry, along the old line of railway connecting the former Albertite mine with the Harvey and Salisbury railway. The exposed thickness of this band is 6½ feet, largely of the curly variety, rich in oil. It has not been tested for sulphate of ammonia. A few yards to the north-east, on the brook itself, apparently the same bed is disclosed, and was opened by blasting. It has a similar thickness of 6½ feet, with a north-west dip at an angle of about 7 degrees. It apparently continues down the stream for some distance, until overlaid above by conglomerates of Lower Carboniferous age, which are unconformable.

Going west up this stream from No. 1, 430 feet, bed No. 3 is seen at a small fall, with a thickness of 5 feet of good shale, but not so curly as the first, and showing a slaty structure on weathered surfaces. On the north side of the brook, bed No. 2 was uncovered on the side of the ridge, with a thickness of about 3½ feet, and is also of excellent quality, with numerous black streaks of carbonaceous matter. These two seams dip south-west at an angle of 8 degrees.

Bed No. 4 lies 150 feet west of No. 3. It has a thickness of 4½ feet, and a dip similar to the last; the shale is of good quality but not of the curly variety. About 290 feet west of this is bed No. 5, consisting of laminations of brownish shales with thin beds of oil shale. It is situated on the bank of the brook, has a south-west dip of about 20 degrees, and is not so massive as the others. Some 650 feet farther on is bed No. 6, which was uncovered on the face and showed a solid front of 6 feet, most of which is of good quality. The dip here is also south-west, at an angle of 10 degrees.

These beds are all easy of access. The contained strata show an anticlinal structure a short distance north, and they are probably repeated in that direction. Faults, however, occur in this part of the field. As newer formations cover the surface to the north and south, their distribution cannot be ascertained except by boring. It may be said, however, that the shafts of the Albert mine were carried down to a depth of 1,400 feet in close proximity, and from the material on the dumps, other bands of the oil-shale were apparently passed through, the positions of which were not recorded, since the search at that time was for albertite only. None of these beds have as yet been submitted to a careful test for either oil or sulphate of ammonia, by this Department.

West of the Albert mines the bituminous shales are concealed, for several miles, along the north flank of Caledonia mountain, by Lower Carboniferous sediments, to within about a mile of Baltimore, where they again reappear on the headwaters of Weldon creek. On the upper part of the east branches of Turtle creek, on Forsyth and Baizley brooks, they are well seen, and on the latter show beds of very rich oil-shale of the curly variety.

These were opened up many years ago to supply the oil works at this place (1862-4). The old drift was cleared out and the bed measured. This bed is numbered, No. 7, or Baizleys. The thickness of the black curly portion is 4 feet, with a lower portion from 2 to 2½ feet of black and rich oil-shale, of the plain variety, the foot and hanging shales being easily recognized. This seam is traceable to the west for nearly half a mile past Rosevale corner and post office. Several other beds of this shale

evidently occur running in a similar direction to the Baizley seam, and can be recognized by the ridgy nature of the surface, due to the greater resistance of this material to weathering.

Bed No. 8 is about 75 yards north of E. Stevens' house, at the summit of the road leading across to the west branch of Turtle creek. It has been opened by a drift driven for 80 feet on the dip of the bed, which is north at an angle 20-25 degrees, and shows a measured thickness of 5 feet clear of very fine oil-shale, mostly of the black curly variety.

To the south of the road, 100 yards in front of Mr. E. Stevens' house, is bed No. 9, also opened by a drift to a depth of nearly 100 feet, the dip being north like the last. The shale is a very rich curly variety, and the thickness at the face of working is reported as 7 feet. A large quantity of this shale, amounting to some hundreds of tons, which had been mined several years ago and left on the ground, was recently set on fire by some one and entirely consumed. The drift at this place is now fallen in, so it could not be entered.

No. 10, or Irving's seam, lies to the north of the main road, and about 1,000 feet east of E. Stevens' opening. This is the bed from which the shale shipment to Scotland was taken. It is opened by a drift for about 75 feet, and at the inner end shows a thickness of about 6 feet. The seam varies in quality, being generally massive, but sometimes with small black streaks, though with small indications of the curly variety. It is certainly inferior in quality to that from the Baizley or Stevens seams. The dip of this bed is north, 20-25 degrees.

The outcrops of several other seams were observed in the vicinity of the corner by Rosevale post office. These had been uncovered some years ago, but the openings were entirely filled up, and the thickness could not be measured. It seems probable, therefore, that at least two other seams or beds, other than those described, should occur in this area.

On the west branches of Turtle creek, about 2 miles west of Rosevale corner, the shales are well exposed and show oil bands at several places. On the first of these branches, near the school house, several bands cross the stream, somewhat greyer in colour than the oil-bands already described. One of these, at the old road crossing to Stewart's, has a thickness of not far from 15 feet, apparently, though this has not yet been opened, the measurements being taken on the bank of the brook.

On the west branch, ¾ of a mile to the west of this, is a bed of what is styled grey shale, which, from the facility with which it ignites and its oily streaky character, appears to be very high in hydrocarbons. The exposed thickness, where opened by a short drift, is about 3½ feet, with the usual north dip, at low angles. Other bands occur on the stream, but lack of time prevented their being opened at the time of our visit.

About 4 miles farther west, on Hayward brook, a branch of Prosser brook, and near the foot of the mountain, three other bands of brownish oil-shale were partially opened up. This shale is soft, resembling in character much of the Scotch oil-shale. The thickness of the first bed was measured as 5 feet, and the other two, though not well displayed, seem to be about the same size. The present comparative inaccessibility of these beds, as compared with those already described, is against their immediate development. Like the Baltimore beds, these shales have been tested for oil and sulphate of ammonia.

Farther west, in Coverdale, Mapleton, and at Elgin corners, these Albert shales are well seen in several streams. They were bored to some extent for oil thirty years ago, without success, but no recent detailed examination for oil-bands has yet been attempted, though several were observed during the examinations of that time. They are well worthy of a careful search along these lines. Several well located borings with a good core drill, under careful supervision, should be able to settle this point.

Large samples of the several beds disclosed from Taylorville on the east to Hayward's on the west, were collected during the past season. These were duplicated,

and one set was sent to New York for determination in the laboratory of Dr. Charles Baskerville, Dean of the Faculty of Science in the College of the City of New York, who has installed a small plant where all these can be carefully tested and their values in crude oil and sulphate of ammonia can be determined. This test will be of the greatest practical value, and with the exception of the large test made recently in the Pumpherston works, Scotland, will be practically the only thorough test to which these shales have as yet been subjected. From the high standing of Dr. Baskerville as a chemist, and of his assistant, Mr. W. A. Hamor, who was present during the whole of the Scotch tests on the New Brunswick shales, and is, therefore, thoroughly conversant with the methods employed in that country, these tests when completed may be regarded as thoroughly reliable. This course is at present necessitated by the fact that the apparatus designed for testing various Canadian shales by the Mines Branch of the Department of Mines, is not yet installed; owing to the contemplated changes in the laboratory, due to the removal to the new Victoria Museum in Ottawa.

The results of a number of these analyses recently made by Dr. Baskerville are by his permission inserted. They serve to show the large values of these shales, both in crude oil and in sulphate of ammonia.

Locality.	Imperial gallons of crude oil per ton.	U. S. gallons of crude oil per ton.	Specific gravity of oil.	Sulphate of ammonia in lbs. per ton.
Shale retorted in Scotland from Irvings opening	40	48	0·92	77
Geo. Irvings, by Dr. Baskerville, N.Y	39	47	0·895	76
Baizley's farm, Baltimore	54	65	0·895	110
E. Stevens, Baltimore	49	59	0·892	67
Hayward brook, Prosser brook	30	35	0·895	75
Adams farm, Taylorville	43	51	0·90	93
A. Taylor's farm, Taylorville, No. 1	48	58	0·91	98
A. Taylor's farm, No. 2	37	44	0·925	110
Sample of 85 lbs., run in 1907, Baltimore	51	61	0·91	111

All that can be definitely stated in the present practically undeveloped condition of the several districts in which oil-shales are known to occur in eastern Canada, is that all these areas are well worthy of being tested in the most thorough manner, and by all available means, especially by careful core drilling at several well selected points; in order that the whole series of beds may be located, their thickness ascertained, and a careful analysis of the several beds drilled through in the sections should be carried out; since in the folded and faulted nature of much of the ground, their actual positions in depth and values cannot otherwise be ascertained.

As regards the Baltimore shale bands several reliable analyses have already been made from time to time. Among the most valuable of these, two may be cited.

One of these analyses by Mr. Hislop, a chemist of known repute connected with the gas works at Paisley, Scotland, was made on one ton of shale from Baltimore, the exact location of the bed from which the sample was taken not being known, and gave:—

Lubricating oil	11 gallons.
Burning oils	25 "
Paraffin wax	48 pounds.
Sulphate of ammonia	72 "

Another test of Baltimore shale made in the laboratory of Dr. Baskerville, New York, by Mr. W. A. Hamor, his assistant, gave:—

Naptha	6 gallons.
Lubricating oil	9 "
Burning oil	11 "
Paraffin oil	5 "
By-products, containing tars, sulphur compounds, creosote, etc	31 "
	62 "

The actual position of this sample is also unknown, but possibly it may represent the Baizley seam at that place.

It may, therefore, be stated that in general character and value, both as regards the contents of crude oil and sulphate of ammonia, the shales of New Brunswick compare favourably, and in some cases undoubtedly surpass, those distilled in Scotland. These two substances should render it possible to utilize at the present scale of prices, certain of these deposits at a fair profit, while the bonus recently granted by the Dominion Government of 1½ cents per gallon on oils manufactured from shales, or the same as that taken from wells, should practically offset the supposed greater cost of mining the crude material. The actual cost of this item is not yet ascertained.

While the greater part of the main vein of albertite was supposed to be worked out at the time the mining of this material was abandoned, this is by no means regarded as actually correct; since portions of the original vein are confidently stated by those familiar with the structure and history of this mine to yet remain in certain parts of the old workings. Recent investigations on this area have also disclosed the presence of other veins of albertite, which by careful testing may make the property as a whole much more valuable than once supposed. The high yield of this substance in oil and paraffin as known by tests at various times should render the average yield of oils from this part of the field much larger than would be obtained merely from the retorting of the shale bands alone; while the immense dumps at this place, aggregating over 100,000 tons, in which large quantities of albertite are known to be embedded, are worthy of consideration, in the event of future operations being commenced.

REPORT ON A PORTION OF CUMBERLAND COUNTY, NOVA SCOTIA.

(Hugh Fletcher.)

I left Ottawa on June 30, under instructions to continue the survey of the district in Cumberland county comprised principally in sheet 78, but also partly in sheets 77 and 79, lying west of Philip river, and the sheets already published, or between Oxford junction and Amherst on the Intercolonial railway and the shores of Northumberland strait and Baie Verte. My assistants were Messrs. M. H. McLeod and John D. MacKenzie. The latter leaving on September 17, one of Mr. Faribault's assistants, Mr. J. M. Cruickshank, was engaged to work until the close of the season.

A general description of the district is given in the Report of the Geological Survey for 1903, also in previous reports by Messrs. Scott Barlow, Walter McOuat and R. W. Ells, mentioned on the map of the Springhill coal fields, No. 812, which was printed in the Summary Report for 1902. In these reports is emphasized the difficulty of defining the various groups of rocks, particularly the conglomerates and grey sandstones, without assistance from their fossil contents, even on a section as well exposed as that of the Joggins shore. It is believed that considerable progress has been made in this direction, and it is confidently hoped that the maps, when issued, will make several points clear that are now obscure. At present the general results only of the season's work will be briefly stated; details of structure being reserved for the maps now in course of preparation.

Beginning at Rossendale and Mount Pleasant, most of the branches of Little river, the Shinemicas, Nappan, Laplanche and Tidnish rivers, also several branches of the Little Forks and Black rivers were surveyed. These afford outcrops belonging to the following geological formations: Carboniferous Limestone or Lower Carboniferous, Millstone-grit, Coal Measures and Permian or Upper Carboniferous. The general character and distribution of these formations are shown in Mr. Ells' report for 1885, Dawson's Acadian Geology, and other publications.

The Carboniferous Limestone, with its characteristic beds of gypsum and limestone, is found in a more or less continuous belt from Mount Pleasant to Minudie, on the Joggins shore. At Rossendale, it is exposed in Philip Fahey's fields, in several branches of Little river, on the Leicester road, at Brookdale, and in the Lime-kiln brook and other branches of Nappan river.

The limestone, gypsum and associated marls and sandstones of the north branch of Little river extend also down the main river below the forks to within a short distance above the mouth of Bear brook, where they are overlaid by gray, and rusty sandstones, probably Permian, or Coal Measures. North of the road at West Leicester, broken land and pits seem to indicate gypsum or limestone, an extension of the Lower Carboniferous of the quarries of East Leicester; as at other places, salt springs indicate the presence of these rocks.

The Lime-kiln brook near its mouth shows gypsum, succeeded by a thick band of limestone which follows the brook up-stream in the most remarkable manner, crossing and recrossing it several times, then turning to the quarries at Shipley's from which 12 tons of pyrolusite were extracted. [1]

The gypsum found in bore-holes at the Routledge farm, and marked also by large pits, is probably continuous with that to the westward, as shown on the map of Springhill.

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[1] Geological Survey, Summary Report, 1898, p. 147.

A comparison of Mr. Ells' map of 1885 with that published by the Nova Scotian Institute of Science in 1908 will show that in his subdivision of the rocks of the Joggins section, Mr. Ells has included Division 7 and the lower part of Division 6 in the Lower Carboniferous instead of making it the base of the Millstone-grit, as in Dawson's grouping.[1] Mr. Ells' point of separation is certainly the more convenient, being that at which the red sandstones and shales of Division 6 are overlaid by greenish and gray sandstones, with black carbonaceous shale and concretionary limestone, near Dogfish reef;[2] and this horizon seems to be recognizable also in the country to the eastward; for, using the line between the red flags and gray sandstone south of the Leicester road as a guide to define the structure, Mr. J. D. MacKenzie traced it from Little river through Salem and Fenwick to the Maccan river, thence to the Joggins shore, where it passes near a mill at the head of Downing cove; which would agree with the boundary given above. The gray sandstone forms a high ridge for a great part of its course and large blocks mark its position even where there are few outcrops.

The Millstone-grit as thus defined occupies a zone nearly parallel with the Leicester road, and at the Styles mine has at its summit 1,500 feet of gray conglomerate and coarse sandstone, underlying the coal, and well exposed in Styles brook immediately above the Gould road, and also for some distance east of Stanley.[3] Thus far small seams of coal have been traced. It has been generally assumed, as on the map of the Springhill coal field, that this is the equivalent of the thick conglomerate that extends from Holt's mill on Little Forks river westward to the fork of the Stewart and Westchester (Post or Economy) roads. The unbroken line of the boundary between the red and gray rocks traced by MacKenzie seems to limit the north and south fault necessary on the above assumption to indicate the equivalence, and the apparent wide distribution of the conglomerate east of the old Westchester road seems to render it possible that there the conglomerate may represent rather the so-called Upper Carboniferous rocks which overlie the Coal Measures at the Aberdeen slope, and thus represent the gray sandstone of Ragged reef. The resemblance of this conglomerate and associated gray sandstone to certain Upper Carboniferous sections to the eastward, makes the determination of its exact horizon of the highest importance in relation to the extension of the coal basins. The beds overlying it in Chase brook and elsewhere, are not like Coal Measures, and the Upper Carboniferous of Pictou harbour includes large masses of gray sandstone.[4]

The copper ore of Amos Blenkhorn and the manganese of Salem have been described.[5]

Coal Measures clearly extend from the Joggins shore to the Stanley mine at the Westchester road, and small seams of coal were traced by Mr. James Baird for a mile farther east, but the question of their further extension to the eastward is the question of the equivalence of the rocks of Styles brook with those of Chase brook, which it is hoped the surveys of this season will conclusively settle. As no coals have been found to overlie the conglomerate of Holt's mill, these strata will be included for the present with the Upper Carboniferous.

The Permian or Upper Carboniferous may then be subdivided into two distinct groups, a lower gray sandstone series, and an upper red soft series growing finer towards the top, and lying on both sides of an east and west anticline which passes south of the Leicester road: the southern outcrops extending from Mount Pleasant to Oxford and Saltsprings station; the northern and larger occupying most of the country north of the Leicester road. The presence of the gray rocks on most of the sections will be observed.

1 Acadian Geology, p. 178.
2 N. S. Inst. Sc., Vol. XI., Part 3, p. 488.
3 Geological Survey, Summary Report, 1901, p. 214.
4 Geological Survey, Vol. 2, 1886, pp. 93-98 P.; ibid Vol. V., ;1889-91, pp. 121-141 P.
5 Geological Survey, Summary Report, 1897, p. 101.

The ledges of gray sandstone of Rossendale and Mount Pleasant succeed the Carboniferous limestone and seem to have as their base a gray grit associated with concretionary limestone-conglomerate. They are best seen in Dickson and Simpson brooks with a considerable thickness of overlying red rocks; but the grey series was not found to occur on the north side of Dickson brook, although one of the whitish overlying beds south of Dickson brook seems to be identical with a slickensided rock at Havelock Carter's near the Leicester road. If there is no unconformity here, the disappearance of the gray sandstone, and a steep southerly dip along the Dickson brook may indicate an east and west fault by which the sandstone is concealed. A higher conglomerate, overlying rusty grits and pebbly flags, was traced for some distance by McLeod across the Simpson brook.

The so-called coals of Mount Pleasant consist only of coal pipes and patches in coarse sandstone. In Dickson brook veins of barite, similar to those of Hodson in Pictou county, and beds containing chalcocite have been worked to a small extent.

Reference has already been made to some of the rocks of Little river. At and near the mouth of Bear brook, the more gritty variety, containing a large proportion of conglomerate, is well exposed and occupies the river nearly to its confluence with Philip river. The rocks of the eastern branches of Chase brook, those of the rocky barrens north of Black river, and of the ridge near the Doncaster Meadow road, are all Upper Carboniferous. Near Hunsley's mill on Little river, the gray and reddish sandstone of the branch from the northward—recorded on McOuat's maps—includes patches of pea and nut-conglomerate, probably Millstone-grit, and resembling certain bands traced eastward from Baird's pits. In the main river up-stream, flags and blocks seem also to denote Millstone-grit, while along the south bank extends a gray and reddish, massive grit and conglomerate, which follows Little river to its head, is continuous with the conglomerate of Little Forks river, seems to be at the base of an unconformable group and is overlaid by whitish and cream-coloured sandstone. At and beyond Hunsley's mill this conglomerate, mentioned as extending from the Post road where it is widespread, is well exposed, and was followed along the adjoining branch of Little Forks river past Holt's mill and down to the Post road. This conglomerate, as already stated, may be Permian; but it is not yet clear that it is not the mass underlying the coal, traced as far as the Baird pits north of the river. Its continuity to the eastward is unbroken until it reaches the neighbourhood of Mount Pleasant.

A good section of Permian rocks is seen on Black river and Chase brook. The spotted red and white rocks immediately above Keiver's bridge[1] at Saltsprings station, are like the Permian of Little river below the mouth of Bear brook and the spotted rocks of Mount Pleasant road. They are associated with conglomerate and grit of Permian aspect. The gray, massive sandstones, blackish-red sandstone, and the spotted rock of the lower bridge are probably identical. In the cliffs down-stream, certain coarse Trias-like varieties resemble Permian rocks of the Nappan, and Shinemicas rivers. A conglomerate near Glenville brook yields pebbles as large as cocoanuts, while somewhat lower down, a red stone resembles that of the Amherst quarries. Up Chase brook these Trias-like beds and others resembling the Amherst red stone are exposed as far as the branch from a meadow on the left. Above this branch, greenish and gray grit and fine conglomerate contain pyritous coal pipes, underlaid by purple marl, and interstratified with thin flags, underlaid in turn by gray and rusty conglomerate and sandstone with fine, calcareous bulls-eyes, resembling rocks of the Doncaster Meadow road, and succeeded up-stream by reddish, brownish and gray flags and shales, sandy, argillaceous and calcareous, towards a mill and camps. Sandstones in thick layers with red argillaceous shales extend to Chase lake, near which gray fine sandstone is abundant. The rocks of the branches above show a descending section as far as the grit of Little river.

[1] Geological Survey, Summary Report, 1898, p. 146; ibid Summary Report, 1903, p. 163.

Further examinations were made in the neighbourhood of Springhill, and from Stewart's meadow north-eastward and south-westward, to correlate this work with the results shown on the map of 1901. These examinations may slightly modify that map, but need not here be presented since they require confirmation and careful investigation of such differences of opinion as those expressed previously.[1]

On the north side of the anticline, one of the best sections is that of Edgett brook, which crosses the Leicester road at Mansfield. The rocks suggest that there is possibly an unconformity between the Permian and all the underlying rocks, including the gray sandstone; but this may again be due to faults. Near the head of Edgett brook the red rocks of Logan's Division 6 are in contact with the gray sandstone of the upper part of that division, dipping southward at a very high angle; while down-stream, below the Leicester road, separated by a long concealed interval, these Lower Carboniferous rocks are succeeded by red and chocolate crumbly flags and sandstones of Permian aspect, no grey rocks being seen on this side. At West Leicester, on the other hand, and north of the road, there occur conglomerate and grey sandstone resembling those of Simpson brook and Little river, and a great thickness of the grey rock is found also on the Westchester road, and in branches of the Nappan river. Here, grey and rusty, coarse and fine sandstones succeed red Lower Carboniferous marls, dip away from them to the northward, and are overlaid by red rocks which include the stone worked at the quarries in Amherst. On the road to Hastings, a short distance from Brookdale, conglomerate and reddish-gray grit of Permian texture succeed Lower Carboniferous limestone, which has been quarried on the west side of the Westchester road, as already mentioned. Permian red rocks then cover the roads from Hastings to Truemanville, and thence to Amherst head and Tidnish; being well exposed in the Nappan river at Hastings.

The Low Brook coal has already been described.[2] Another of the small impure coal groups of the Upper Carboniferous upon which large sums of money have been wasted, but which gives no promise of improvement in size or quality upon development, is found on a little brook running into Blair lake south of Amherst, on the road to Nappan. Here, three openings have been made into a bank of heavy drift soil on the right or west bank of the brook. One of these runs west as a level for about 45 feet, then turns square to the right on a coal seam dipping northward at an angle of 20°. Another tunnel about 50 feet north of the first, also near the level of the brook, was driven in about 65 feet; a third is higher up the bank. In the first tunnel a band of coaly shale, 10 inches thick, with more or less lenticular layers of good coal, is underlaid by a few inches of grey, soft clay shale, succeeded by grey crumbly fine sandstone. Among the coal and in the roof are small layers of coherent limestone and ironstone. All the rocks are very pyritous, and adhering to the coal in some places are fine aggregations of pyrite. In the brook, reddish coarse Permian grit and conglomerate dip north at an angle of 18°, but at one point 42°, including layers of red concretionary limestone-conglomerate, like that of Duck creek on Philip river. These openings were made by Mr. Harry Davis of Amherst, who has also traced the coal into a little brook adjoining to the westward.

Permian rocks are well exposed on the shores of Northumberland strait, both in cliffs and low water reefs, from the mouth of Tidnish river to Northport, and also on the low shore as far east as the mouth of Philip river. They consist of red shale and massive sandstone, showing but little variety, undulating in flat folds, with the dip always low so that the same beds follow the shore for a great distance. A sandstone quarried at Black's quarry, and again at Myers' quarry on Coldspring head, resembles the Amherst red stone. These quarries have been worked only to a limited extent. Inland there are few outcrops; but bore-holes and wells have usually cut

1 Geological Survey, Vol. I., 1885, p. 25 E.
2 Geological Survey, Summary Report, 1898, p. 147.

shaly or thick-bedded sandstone at no great depth, and blocks of the characteristic red limestone-conglomerate are not infrequent.

Around the head of Baie Verte, for some distance west of Tidnish, there are no outcrops, but the debris indicates rocks similar to those described above. From Port Elgin to Cape Tormentine, the frequent exposures of reddish and gray sandstone all have a very low dip, and on the cape bend over a broad anticline.

BORING FOR COAL.

As in previous years, owing to the great activity in the mining districts of the Province, and the demand for geological information by explorers, I was often taken from the field of systematic work.

In the boring at Pettigrew with the calyx drill,[1] the first core was obtained at 2,347 feet; the boring was then continued to 2,518 feet, where, after fishing a month for broken rods, it was given up in conglomerate and sandstone, loose and friable, mostly brought out as gravel and sand, so that out of 120 feet only 10 feet of good core was recovered. No coal debris was found in boring. In connexion with this work, Mr. H. B. Pickings, of the Nova Scotian Department of Mines, came to Springhill on September 26, to discuss the advisability of boring other holes with a cable drill by contract. Two locations have been suggested to the government as worthy of trial; Clam cove west of Shulie, and the Maccan river near Southampton. Other places have also been mentioned, on some of which more light may be thrown by the surveys of last summer and by the government bore-holes in Prince Edward Island.

METAMORPHIC ROCKS OF KINGS COUNTY.

Early in July, and again about the first of August, a few days were spent at Whiterock with Mr. E. R. Faribault, who was studying the relations of the quartzites there to the gold-bearing rocks;[2] and from September 7 to 12, the superposition of the fossiliferous Silurian of New Canaan and South Alton upon the underlying slates was followed with Mr. W. Malcolm.

Mr. R. W. Ells, on his return from Scotland, examined the black shales of Antignoish,[3] Pictou and Cape Breton, as to their capacity for producing oil; and wishing also to compare those of Avonport, Cheverie, Walton and other places with the rich bituminous oil-shales of New Brunswick, I accompanied him to the last named places in October. In the course of this examination a remarkable deposit of reddish, greenish and mottled metamorphic rocks resembling the flinty quartzite-flags and the slates of the Millbrook at Kentville, sometimes supposed to be Devonian, was pointed out by Prof. Ernest Haycock, on low-water reefs west of Avonport pier. These rocks lie nearest the base of the section west of Horton bluff, but are more like rocks of the upper part of the Horton series, those of the west side of Walton river and near Tennycape mines, while the agate-like markings on the bedding planes of the flags are strikingly like those of Coldbrook. At all these points the metamorphic rocks unconformably underlie the Triassic, which in cliffs and reefs presents points of great interest in the alternations of coarse and fine sediments, resembling those from the bore-holes near Fullerton lake, beds of conglomerate extending far upward from the contact, and containing pebbles of pyrolusite derived from the older rocks in which it is now mined. The rocks near the bridge at Tennycape resemble the Horton of Crowell creek and the shore towards Hantsport, containing beds of blackish sandy shale and reddish coarse grit among finer beds which, in common with those of Cheverie, afford fine examples of contorted, crumpled and faulted strata, worthy

1 Geological Survey, Summary Report, 1907, p. 7.
2 Geological Survey, Summary Report, 1907, p. 4.
3 Geological Survey, Summary Report, 1907, p. 10.

to be compared with those of the neighbourhood of Whiterock. Further comparisons of the various sections of the Horton remain still to be made; the grits, sandstones and dark shales can probably be correlated throughout the entire district; for sections are numerous, as in Harding (Angus) brook, in which, as already described, [1] these rocks from their unconformable base upon the *Dictoyenema* slates give a thick, regular, ascending sequence. The presence of *Lepidodendron* and other plants, together with the fish remains collected and examined by Mr. Lawrence M. Lambe, may be expected to fix definite horizons.

In this connexion it may be mentioned that at Cheverie, another bore-hole said to be 1,000 feet deep has been drilled for oil in Johnston point, north of the other two. The dark shales of this neighbourhood are like those of North river above Truro; of Riversdale, Curry brook and the Gaspereau river; none of which are regarded with favour by Mr. Ells as a source of oil when compared with the albertite and oil shales of the Albert mines, supposed to be of the same geological period of formation.

PERMIAN ROCKS OF PRINCE EDWARD ISLAND.

With Mr. Ells, between October 12 and 21, another interesting excursion was made to Prince Edward Island, to compare the rocks there with those of the adjoining shores of Cape Breton, Nova Scotia and New Brunswick, the Dominion Government having undertaken to test the existence of coal in the island by a number of deep bore-holes. The first of these, at Gallas point, located by Mr. Ells some years ago, was visited by us, in conjunction with Mr. F. H. Stover, the contractor. It has now reached a depth of 1,900 feet, but has cut no rocks different from the red soft sandstone, shale and impure concretionary limestone of the cliffs along the seashore in the vicinity, rocks precisely like those of the opposite shore between Cape Tormentine and Philip river, described in this report as Permian or Upper Carboniferous. These rocks were again met with at Summerside—also visited with Mr. Stover—and at many other intervening places.

On returning from Prince Edward Island, Mr. Ells and I drove to Lower Rockport, to examine recent workings by Messrs. E. N. Jones and H. A. Ripley, upon two small coal seams, regularly interstratified in belts of argillaceous shale and resembling lower coals of the Joggins among the thick gray sandstones of the Millstone-grit. Levels along the coal have been driven for more than 100 feet into the cliff, but the seams are too small to be profitably worked even at their thickest. Underlying these gray rocks are the red shales and flags of Pecks cove.

COMMISSION ON SUBMARINE MINING.

About the middle of August, I accompanied Messrs. T. E. Forster, W. G. Scott, and Hiram Donkin, members of a government commission on submarine mining, to point out and explain the character of the different materials composing the roof and pavement of the coal seams of the Sydney coal field; visiting the mines at Lingan, Glace Bay and Port Morien, as well as typical outcrops along the shores. A week later I went with these gentlemen to some of the collieries in Inverness county, and subsequently to the Joggins mine in Cumberland county, now worked by the Maritime Coal, Railway and Power Company, where the new slope[2] on the shore of Cumberland basin near the pier is now 2,400 feet deep, with levels broken off at 1,800 and 2,300 feet, hence has practically all its workings beneath the sea.

On August 25, I joined Mr. Faribault, and other members of the Mining Society of Nova Scotia, in an excursion to Sydney, but left next day for Inverness.

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1 Geological Survey, Summary Report, 1898, p. 180.
2 Geological Survey, Summary Report, 1907, p. 10.

EXAMINATIONS IN CAPE BRETON.

Early in November, by request of the manager, Mr. M. S. Beaton, several days were again spent at Inverness mines to examine the section of a cross-cut through strata, overlying the main seam as far as the so-called 13 foot seam, and to compare it with other sections exposed in the district, or cut through in pits and bore-holes recently sunk in preparation for extensive operations on the large seam. The tunnel had been driven the distance at which the 13 foot seam should have been encountered, without finding coal of the full thickness of that seam on other sections.

Late in November, my services were again sought by the company that has done so much in the exploration of the Richmond coal field, and I subsequently spent several days with Mr. L. O. Mellinger and the drillers in that field.[1]

On November 13, I visited, with Mr. William Routledge, a deposit of hematite at Coxheath near Sydney, along the contact of a Lower Carboniferous limestone with conglomerate and older rocks, shown on the 'Survey' maps of this district, similar in mode of occurrence to the hematite at Big Pond, Boisdale, Goshen, Newton Mills, and other places;[2] and to the limonite and other metalliferous ores of Bridgeville, Brookfield, Stewiacke and other contacts. Here a small quantity of ore has been taken out of shallow pits, and boring has been begun in search of a larger quantity.

1 Geological Survey. Summary Report, 1902, p. 388.
2 Geological Survey, Summary Report, 1904, p. 297.

SOUTHERN PART OF KINGS AND EASTERN PART OF LUNENBURG COUNTIES, N.S.

(E. Rodolphe Faribault.)

GOLD IN QUEBEC.

On April 29, 1908, in company with Mr. J. Obalski, Superintendent of Mines for the Province of Quebec, and Professor E. Dulieux, the writer made an examination of a recent discovery of gold at Marsboro, on the west side of Lake Megantic. Visible, free gold associated with chalcopyrite, pyrite and galena occurs in small reticulated veins of quartz cutting through shattered dikes of aplite, which generally lie along the cleavage planes of sharply folded slates of Cambro-Silurian age. The slates resemble in some respects the gray slate of the upper division of the gold-bearing rocks of Nova Scotia. A sketch plan has been made showing the location of the gold discoveries and the probable structure of the rocks. This has since been published in a special report on the district by J. A. Dresser.

FIELD WORK IN NOVA SCOTIA.

My instructions for the past season were to continue the geological and topographical survey of the southern part of Kings county, and the eastern part of Lunenburg county, in order to secure the data necessary to complete for publication the Gaspereau sheet, No. 85, the New Ross sheet, No. 86, the Chester Basin sheet, No. 87, and the Mahone Bay sheet, No. 88. This has been accomplished, excepting that on the last named sheet, more work is still required in the western part.

My assistants for the season were Messrs. W. Malcolm, M.A., J. McG. Cruickshank and H. R. Mader, all of whom acquitted themselves well in the work entrusted to them.

Mr. Malcolm's time was devoted chiefly to the study of the geology and mineralogy of the field, and the plotting of surveys made during the season. Messrs. Cruickshank and Mader were engaged, the first part of the season, in working out the structure of the gold-bearing rocks lying to the south of the Gaspereau river, and the greater part of August, September, and until October 24, in taking barometer readings to determine elevations through the region included in the Gaspereau, New Ross and Chester Basin sheets. Railway profiles and the instrumental leveling of the roads made last summer with the stadia and transit by Mr. F. O'Farrell, were used as a base for this latter work.

GOLD-BEARING ROCKS IN KINGS COUNTY.

The first two and one-half months were spent in making a detailed revision of the geological structure of the group of slates and quartzites extending along South mountain from Wolfville and Kentville southward to the granite region. The area has been surveyed and mapped in much detail on a scale of 20 chains to 1 inch by Mr. Hugh Fletcher, who has reported on the district in the Summary Reports for the last three years.

Mr. Fletcher, referring to the age and structure of these rocks, says,[1] 'the slates are generally so cleaved and closely folded that even when well exposed in considerable thickness and over large areas, it is only by the most careful inspection that the folds can be distinguished. In an estimate of the thickness and geological age of these

[1] Summary Report, Geological Survey, for 1906, p. 141.

slates, the few fossils being obscure and referable to any horizon from Cambrian to Devonian, the working out of these folds is of the utmost importance, and in order to determine their structure, certain conspicuous bands of quartzite were surveyed and mapped on a scale of 20 chains to 1 inch, to confirm the evidence collected from the dip of the slates; but there is still much that is obscure and requires further elucidation.'

Last season's work was, therefore, to determine with more detail and greater precision, if possible, the geological structure of these rocks, in order to finish the Kentville sheet for publication. The surveys were plotted in the field, and fitted on Mr. Fletcher's map as the work progressed. The results obtained may be briefly given here, before the map is published, subject to revision.

All the sedimentary rocks to the south of Wolfville and Kentville, with the exception of the Horton, the Triassic and the small area of fossiliferous Silurian south of New Canaan, form what appears to be a continuous series of argillaceous and siliceous slates, overlying conformably the lower whin rock, or Goldenville division of the gold-bearing series. The whin rock is exposed in different parts of the field; the line of division between it and the overlying slate and two beds of quartzite which outcrop very conspicuously at Whiterock, form two well defined horizon markers by which to work out with certainty the geological structure and the true order of succession of the different slates of the region.

These great series of whin, slate and quartzite, have been sharply folded into three main anticlines and synclines, the axes of which extend in a north-east and south-west direction.

The North Anticline.

The north anticline runs south-westerly from Kentville along the crest of Green hill, crosses Tupper lake where the slate is succeeded by the underlying whin rock which spreads out in a broad fold, and extends 2 miles west to the granite on Sharpe brook. It shows again 6 miles farther west, on the Aylesford road to the south of Morristown, where the whin rock has a width of 2 miles. This anticlinal fold pitches east along its whole length. It has several small crumplings along its apex, with a few quartz veins which do not, however, look promising for gold.

The South Anticline.

The south anticline crosses Black river half way between the first and second bridges, where the whin rock is exposed for a width of a quarter of a mile, and extends south-westerly to the south of Sunken lake, where it is cut off by the granite. From Black river this anticline extends north-easterly, passing between the Union Street post office and Schofield corner, and crossing the headwaters of Halfway river and Duncanson and Harding brooks, beyond which it is concealed by the Horton series. It forms a sharp fold with an eastern pitch, and shows the whin rock along its course as far east as Union street, where it is overlaid by slate. Gold-bearing quartz was discovered, it is said, on this anticline in 1868, but the district has received very little attention from prospectors.

The Middle Anticline.

The middle anticline crosses the Deep Hollow road three-quarters of a mile north of Whiterock post office, and extends easterly along the north side of the Ridge road to where it is overlaid by the Horton series opposite Wolfville. South-westerly it crosses the road leading from Whiterock to New Canaan at its junction with the Highbury road beyond which the two bands of Whiterock quartzite curve around on a westerly pitch. A little farther west the slates are concealed by the Silurian rocks already referred to.

This anticline is also composed of several small crumplings, but unlike the other two, it pitches to the west and does not bring the whin rock to the surface. It shows a few small quartz veins, which may be auriferous, but have no economic importance.

Synclines.

The north syncline crosses the Deep Hollow road half way up and the Canaan road at Johnson hollow, while the middle syncline follows the valley of Gaspereau river, almost to the granite. These two synclines occur one-third of a mile on each side of the middle anticline, and like the latter, they pitch to the west. They are made up of several small undulations, which are conspicuous along the Deep Hollow road, where the two bands of Whiterock quartzite form subordinate, but prominent anticlinal folds pitching west and standing up in bold relief. The structure is rendered still more intricate by the presence of several transverse faults.

The south syncline is seen a short distance south of the Greenfield sawmill on Halfway river, and on Pencil brook it is well exposed. A small crumbling occurs on the south side of this fold, and auriferous quartz float reported to have been found to the south of Etna post office, probably comes from veins occurring along the anticline of this subordinate fold, which, however, could not be closely located on account of the covering of drift.

Faults.

After the folding took place the whole of this region was extensively faulted, like the gold-bearing rocks along the Atlantic coast, by an extraordinarily regular system of step-faults running obliquely to the axes of the folds in a south-easterly direction, with horizontal displacements on the north-east side, almost invariably toward the south-east. These are appropriately called right-hand faults by the gold miners of the Province. In tracing out the two prominent beds of Whiterock quartzite, it was possible to locate and determine the extent of most of the faults, with a fair degree of precision. Some of them could be followed by surface indications, such as straight, narrow depressions and swamps, and by the clear cold springs which abound along their course. The horizontal displacements vary from a few feet up to 900 feet; but the vertical displacement could not be determined, except in a few cases.

Thickness of Total Section.

A detailed section of the slates measured along Black river from the whin rock to the two bands of Whiterock quartzite, and along Elderkin brook from the same quartzites to the highest slates in the syncline, gives a total thickness of about 14,500 feet of strata. Of this thickness, the lower 11,700 feet correspond in character and thickness to the upper or Halifax division of the gold-bearing series of the Atlantic coast, and the remaining 2,800 feet, from the base of the two bands of quartzite, are probably a sedimentary series not represented along the coast. If we add to this thickness the 16,000 feet of whin rock, that is, the Goldenville division as exposed at Moose river, we have a total thickness of 30,500 feet for the whole.

Geological Age of the Strata.

The slates immediately overlying and underlying the Whiterock quartzite differ much along the contact, both in aspect and colour, even at points not widely separated. For this reason the conformity of the two has been doubted. The changes in the character of the slates might, however, be explained by local causes not involving an unconformity. For example, in the case of the slates which at Whiterock falls, Gaspereau river, are dull red to fawn coloured, and on Black river, three-quarters of a mile west, are blue-black, shiny and quite unweathered, an examination of the inter-

vening exposures seems to show that the change in colour is a gradual one. In one brook in the interval, the change is only partial, the slates presenting a mottled appearance with the red colour confined mostly to lines of cleavage and joints, the more solid portions retaining their blue-black colouring. There can be little doubt that this change in colour is due to weathering or to the infiltration of iron leached from overlying rocks, perhaps the Horton.

The red colouring of the slates farther down Gaspereau river and up Duncanson and Harding brooks, is probably due to the same cause. The section on Black river and that on Sharp brook reveal similar changes in the slates. On Black river the whin rock is overlain mostly by quite unweathered, blue-black, clay slates heavily charged with iron pyrites, succeeded by gray argillaceous and siliceous, banded slates with a micaceous, shiny lustre; while on Sharp brook the whin rock is overlain by the same blue-black slates, the lowest beds of which are metamorphosed into knotted, crystalline slate by the neighbouring granite. These are followed, higher in the series but lower down the brook below the Prospect road, by gray and red banded slates in which the thin siliceous layers are coated with films of red hematite. Dictyonema fossils were found by Mr. Fletcher in these red slates near a 20 foot fall on this brook, and in other brooks in the vicinity, also on Moore and Elderkin brooks near Kentville, in all cases at approximately the same horizon, about 5,000 feet above the whin rock.

If the sequence be conformable, the Dictyonema slates here occupy a horizon in the upper division of the gold-bearing series about 4,000 or 5,000 feet above the whin rock. The lowest palæontological horizon of Dictyonema is Upper Cambrian or Lower Cambro-Silurian, while the gold-bearing slates everywhere else are barren, and many geologists classify them as Pre-Cambrian, on which assumption many thousands of feet of fossiliferous Cambrian must intervene between them and the Dictyonema horizon, as in Cape Breton, New Brunswick and Newfoundland. It is best, therefore, to defer judgment as to their definite age until they have been more carefully studied farther west in connexion with the Nictaux and Torbrook iron-bearing series.

Diabase Dikes.

Numerous dikes of diabase or diorite, from a few inches to several yards wide, are intruded in these slates and the Silurian rocks, generally occurring in continuous bands along the bedding or cleavage planes. The small dikes are generally quite schistose, while the larger ones have a more coarsely crystalline texture. The adjacent slates are often altered for a few inches from the contact.

Origin of Gaspereau River Valley.

The writer finds no evidence of a great fault along the Gaspereau river above the Whiterock falls, as has been reported. The narrowness of the valley is probably due to the presence of the middle syncline of soft slate, flanked on both sides by the two bands of Whiterock quartzite, which resisted denudation and formed the two steep banks of the deep valley. Below this barrier the valley widens out and loses its youthful appearance. The valley in which the Deep Hollow road lies at Whiterock shows evidence of having been an old river channel, through which the Gaspereau and Black rivers probably discharged their waters into the Cornwallis river, until with the aid probably of regional tilting, the obstructing quartzite at the falls below Whiterock was removed by erosion and allowed the river to follow the syncline farther east along its present course to the Horton basin.

This region presents one of the most interesting fields for the student of structural geology. It is easily accessible and its picturesque beauty, enhanced by the weird, rugged scenery of the Black River falls and the gorges, pot holes and cauldrons of Hell Gate, make it a most attractive resort for the summer tourist.

NEW ROSS DISTRICT.

Part of September was spent at New Ross, Lunenburg county, revising the geology of the granite and the gold-bearing areas of that region, to complete the New Ross sheet. A survey was made of the pegmatite and aplite dikes in the granite which contain minerals of tin, tungsten, molybdenum, bismuth, lithium and other important metals.[1]

No work worth recording has been done since last season at the King tin deposit, or on any of the other dikes.

Dr. H. W. Cain's manganese mine has been idle since the spring of 1904, but it is rumoured that work will be resumed shortly.

E. Turner, of Mill Road, has opened an important vein of manganese in the granite 2 miles north of Dr. Cain's manganese mine, on the height of land between Wallaback and Dean-and-Chapter lakes. Two pits have been sunk, one of which is 30 feet deep and the other 25 feet deep. The vein is vertical and has been traced by float about a thousand feet; its course lies about N. 70° E. It is of much the same character as Dr. Cain's vein; at the surface it is composed chiefly of botryoidal hematite, with some ochre and a little pyrolusite; at the depth of 26 feet the pyrolusite begins to increase, and at 30 feet the vein is 14 inches thick and composed of 5 inches of good manganese ore and 9 inches of mixed iron oxide and crushed pyrolusite and granite. The country rock is a light reddish-gray porphyritic biotite granite, somewhat crushed along the walls of the vein. Drift manganese has been found at many places in this section of country, lying between Wallaback, Dean-and-Chapter, Porcupine and Baptist lakes, as much as five barrels having been found in one spot. This would indicate the presence of several veins not yet discovered, and should encourage prospecting in this promising field.

E. Turner has also opened a vein in the granite, on the west side of the Wallaback stream, half-way between Camp and Harris lakes, carrying tin and tungsten ores, in the form of cassiterite and scheelite, associated with copper pyrites and zinc blende. Several dikes of quartz-porphyry, aplite and quartz have been located in this vicinity, some of which show molybdenite, chalcopyrite, etc. Several blocks of quartz carrying molybdenite in fair quantity have been observed 3 miles east of New Ross on the south side of the new Windsor road, on Harden Russell's farm, and also on the south-east side of Whalen lake.

A survey has been made of the outlines of the two areas of quartzite and slate of the gold-bearing series occurring in the granite, a short distance to the north of the new Windsor road between New Ross and Vaughan. The western area is 12 miles long by about a mile wide, and extends from the Kentville road in a north-easterly direction across De Adders, Camp, Wallaback and Grassy lakes, where it curves to the eastward across Smith river and the north end of Lower Canoe and Little Island lakes. From there it extends to Leminster, where the upper slate division overlies the whin rock. Free gold has been discovered by E. Turner in a few quartz veins, and in drift on the east side of Wallaback lake in a cove opposite a small island. The veins occur on an anticlinal fold running north-easterly on the north side of Grassy brook and south-westerly across Wallaback lake to the outlet of Camp lake. Some interesting contacts with the granite are well exposed on the eastern shore and islands of Wallaback lake.

The eastern area of gold-bearing rocks lies directly north of Vaughan post office, and extends 3 miles towards the north, between the Windsor road and the Avon river.

Lack of railway communication is a handicap in the exploration and development of the mineral resources of this part of the Province. The construction of a railway through the district would not only give an impetus to the mineral industry, but

[1] Summary Report, Geological Survey, for 1907, pp. 80-83.

would tap a great forest area and probably lead to the development of much of the water-power that is now going to waste.

CHESTER BASIN DISTRICT.

The first part of October was spent in tracing the boundaries of the Lower Carboniferous limestone and gypsum areas in the vicinity of Chester Basin and East Chester. Limestone is exposed at several places, but gypsum could not be observed anywhere. Along the eastern shore of Chester basin and up the Middle river the ground is much broken, and shows a great number of symmetrical, circular, funnel-shaped sink-holes, often attaining 20 feet in depth. These are characteristic of the presence of gypsum rather than limestone, underlying the drift. Some of the sink-holes are very recent, for the gradual formation of two of them has been witnessed by inhabitants of this section now living.

TUNGSTEN DEPOSITS OF MOOSE RIVER GOLD MINES.

The discovery of the tungsten-bearing mineral scheelite, in the Moose River gold district, Halifax county, early in the summer of this year, promises to be of considerable economic importance. In November, 1907, a quartz boulder carrying a small amount of a bright canary-yellow powder was found by John A. Reynolds and W. S. Currie, about 2 miles west of Moose River Gold Mines. In May, 1908, this was placed in the hands of A. L. McCallum, B.Sc., chemist and analyst, Halifax, who, along with Prof. Walker, of Toronto University, determined it to be tungstite, although later analysis by Mr. McCallum proves that it is a mixture of tungstite and scheelite.[1]

Prospecting was then begun under the direction of Mr. Reynolds and was prosecuted so systematically that within two weeks scheelite *in situ* was discovered. The original tungsten-bearing boulder was found 300 feet east of Stillwater brook, not far from the mouth of a small tributary. Both of these brooks have a southerly direction. By a thorough examination of the coarser drift found in the small brook, and of the fine scheelite got by panning, the debris was traced up stream to its northern limit, and here in the bed of the brook a scheelite vein was found. Westward about 700 feet on the strike of this vein and on Stillwater brook, another vein was found, and further prospecting in the neighbourhood of these two brooks has revealed the presence of several veins.

On October 8, the writer and Mr. Malcolm, in company with Messrs. Reynolds and Currie, made a survey of the locality. A plan has since been plotted on the scale of 250 feet to 1 inch, a copy of which was furnished to the property owners, with notes on the structure of the veins for the use of the operators in their development work. The Moose River sheet, published in 1898, shows the location and general structure of several quartz veins on the anticline crossing Stillwater brook, some of which correspond to the tungsten veins; and the special plan of the Moose River gold mines published the same year gives the detailed structure of that district, which closely resembles the structure of the tungsten area situated only a short distance farther west.[2]

The only rocks exposed in this section are those of the gold-bearing series, consisting of heavy beds of bluish-gray quartzite, with interbedded black graphitic slates. They are the lowest strata of the whole series known in the Province, brought up along the Fifteen-mile Stream and Beaver Dam anticlines which converge as they approach the Moose River district from the east and join some distance west of Stillwater brook. The immense strain and pressure accompanying the meeting of these two folds have greatly disturbed the measures, and caused many flexures and faults which probably gave vent to tungsten-bearing, deep-seated emanations at the

[1] The Canadian Mining Journal, September 15, 1908.
[2] Summary Report, 1897, Vol. X., pp. 113-114 A.

time of the granite intrusion. A cross-section of the rocks exposed along Stillwater brook shows that within a distance of 525 feet the strata have been folded into three small anticlines and two synclines, which have a general east and west course and pitch west at low angles.

Fourteen veins bearing scheelite have so far been uncovered by Messrs. Reynolds and Currie, all of which occur in slate bands interstratified between beds of quartzite and dip north at angles of 60° to 75°. They are comprised in a well defined zone 200 feet wide, limited on the north by the north syncline and on the south by the middle anticline. In depth these veins will probably be found to terminate at the syncline, but being of deep-seated origin they are undoubtedly underlaid by a succession of other veins which should offer a promising field for deep mining. Further exploration will probably disclose scheelite veins outside that zone, especially south of the middle anticline, where the rocks are more crumpled and fractured, but the veins may not be so well defined and continuous. Several large interbedded quartz veins are exposed on the north side of the south anticline 200 feet south of the west bend on the brook. One of these is 10 feet thick, and forms a prominent saddle of white quartz, pitching west on the anticline. These veins have more the characteristic of the gold-bearing veins and do not appear to carry scheelite.

The structure of the rocks indicates that there is probably a cross-country fault immediately east of the first trench on the east side of Stillwater brook, with a horizontal displacement of about 150 feet to the north on the east side of the fault. This would explain why the course of the tungsten veins on Stillwater brook is so different from that of the veins farther east along the small brook.

In some places the slate exhibits incipient recrystallization, the presence of numerous small black specks showing a tendency towards the formation of a knotted phyllite. Both the slate and the quartzite adjacent to the veins are much altered, and carry a great deal of white, scaly mica, probably sericite, the slate being changed to a sort of chloritic schist, and the quartzite to a quartz schist. These rocks are much rusted by the weathering of an iron-bearing mineral. Unweathered portions of the slate are found to carry numerous well-formed crystals of arsenopyrite about $\frac{3}{16}''$ long, commonly surrounded by a narrow zone of white mica, with the scales at right angles to the surface of the mispickel. The quartzite, or quartz schist, is dotted with smaller rusty specks, many of which are lenticular and were probably arsenopyrite.

The vein matter consists of mispickel, scheelite, and translucent, white quartz in varying proportions. The scheelite is coarsely granular, shows distinct cleavage, is translucent, and is honey-yellow to pale brown in colour. Scattered throughout the veins are patches of fine, white, scaly mica with a silky lustre, and embedded in the scheelite and the quartz are needles of black tourmaline. The scheelite seems to have crystallized before the quartz, for many veinlets of the latter are seen cutting the former, generally in a direction perpendicular to the walls of the veins. The mispickel also is probably of later deposition than the scheelite, and is intimately connected with the quartz. The veins have as yet been exposed only in prospect pits, which have been dug in the drift, but it can be seen that some of them are quite uniform in width, especially those in which quartz predominates. Those that are richer in scheelite are commonly in lenses averaging a foot or more in length. They are from 1 to 14 inches thick, dip at a high angle, and many of them show the rolls that are so common in the gold-bearing veins. The rolls pitch westward, run about parallel with the axes of the anticlines, and may indicate, as in the gold vein, the general pitch of the ore shoots.

Although no igneous rocks have yet been found in the neighbourhood of these deposits, they probably resulted from the intrusion of granite, which is exposed in a large mass about 7 miles to the south and south-east and, no doubt, underlies this area.

Several assays for gold of the ore from different veins were made by Mr. McCallum, with negative results in every case. The tungsten veins differ materially from the gold veins of the district and are probably of different age and origin.

The extent of the mineralized area is not known, but veins enough have been exposed to show the importance of the deposit from an economic point of view. That the area is much larger than might be supposed from the veins exposed by Messrs. Reynolds and Currie is shown by the fact that scheelite was found in drift in a line extending 300 yards west from Stillwater brook, and in an isolated boulder a mile and a quarter west. Some was found *in situ* about half a mile east, in a vein 20 feet south of the Johnston shaft, also in a vein just east of the main road at Moose River Gold Mines, as well as on the dump at Kaulbach's last vertical shaft. Scheelite has, therefore, been found over a space of 3 miles along the Moose River anticline. Further systematic prospecting along this anticline should reveal other veins, and the fact that those thus far found are of the regular bedded type, should be of much assistance to the intelligent prospector in the pursuit of his work.

Scheelite has about the same hardness as apatite and can be cut with the knife, specific gravity about 6, i.e., over twice the weight of ordinary rock; colour, white, pale yellow, brownish, greenish and reddish and is transparent to translucent. Its composition when pure is: lime 19·4 per cent, tungstic acid 80·6 per cent. Other important ores of tungsten are wolframite and hübnerite, the former being a tungstate of iron and manganese. Although scheelite is richer in tungsten than the others, it was for a time considered less desirable, owing to the difficulty of its metallurgical treatment, but the modern method of reduction, in the electrical furnace, has rendered it fully as desirable.

The following table of production of tungsten concentrates in the United States, taken from Vol. XVI., of *The Mineral Industry,* gives some idea of the value of the mineral:—

Year.	Production in Short Tons.	Value.	Average per Ton.
1900..	46	$ 11,040	$240
1901..	179	27,720	155
1902..	184	33,112	180
1903..	292	43,639	149
1904..	740	184,000	249
1905..	834	257,463	308
1906..	1,096	443,150	404
1907..	1,468	715,031	487

A concentrate that runs 70 per cent tungsten trioxide is worth in the neighbourhood of $11 per unit, or $770 per ton.

Tungsten minerals are known to occur at three other places in Nova Scotia. At Emerald, on Murphy brook, a tributary of Big brook, about 9 miles by road from Margaree Forks, Inverness county, a boulder of quartz was found, carrying three to five hundred pounds of hübnerite, associated with a little chalcopyrite and hydromica. This boulder lay on a lenticular vein of similar quartz, about 3 feet wide, through which was irregularly scattered a small amount of hübernite. The vein occurs in Pre-Cambrian gneissic, or granitic rock. Scheelite of a light, smoky gray colour was found associated with pyrite and arsenopyrite in a quartz vein intersecting the Middle Rabbit lead at the Ballou mine, Malaga, Queens county. All three minerals, wolframite, hübnerite, and scheelite, have been found very sparingly in pegmatite dikes in the neighbourhood of New Ross, Lunenburg county.

At the time of going to press, Mr. McCallum reports the discovery of an important vein of scheelite in a slate belt in Halifax county, 1 mile north of Waverley, halfway between Perry lake and the old Cobequid road. The vein was opened up for gold about ten years ago by some Indians, who on being shown a small piece of scheelite lately recognized it to be the same mineral which they had found and which has since been identified by Mr. McCallum. Mr. F. H. Mason, chemist, formerly of Halifax, informs me that he has often found traces of scheelite in the tailings from the lake-

lode at Caribou gold mines. It is very probable that scheelite occurs in other gold mining districts of Nova Scotia, but owing to its non-metallic lustre, it has not attracted the attention of the miner. A systematic search for it over the old dumps of gold mines may be rewarded by other important finds. It may easily be mistaken for calcite or siderite, which often occur in the auriferous veins, but may be recognized by its weight, which is about twice that of the others.

WATER AND BORINGS BRANCH.

(E. D. Ingall.)

Early in March, at the request of the Director, I turned my attention to the general question of borings, etc.

Acting in the light of the general instructions received, the object kept in view has been to inaugurate a division for the collection of records of all bore-holes made throughout the Dominion. Incidentally, data will accrue regarding water supply, especially of underground water, natural gas, mineral oil, salt, etc., or other useful minerals encountered in the bore-holes of which logs can be obtained.

Evidently the investigation of water supply is to a certain extent dependent upon the results obtained in borings made, from which, interpreted in the light of the local geology, opinions might be formed as to the best places to look for water in any given locality.

The work of such a branch naturally falls into two main divisions, viz.:—

A. The collection of as many records as possible of bore-holes put down in various parts of the Dominion.

B. The technical study and interpretation of all this material, with a view to rendering it valuable for the use of the public in reports to be issued at frequent intervals.

The first (A) resolves itself largely into the problem of getting and keeping in touch with the contracting drillers operating in Canada; in persuading them to co-operate with the Department by sending in complete and careful logs of wells put down, together with samples of drillings from the various strata encountered. This information, when acquired, must be carefully filed and prepared for further study and correlation. A system for doing this is essential, as is also a permanent staff, the members of which can by practice become so familiar with the routine that the records constantly coming to hand will be filed ready for examination and reference without any chance of confusion and consequent loss.

The system of accomplishing this, as followed by the United States Geological Survey, was found, with a few adaptations, to be suitable for our purpose, and was, with the Director's sanction, adopted.

Circulars explaining the scope of the proposed work and its value to the 'Survey,' the public, and the contracting drillers, etc., were sent out to a number of firms owning drilling rigs, soliciting their co-operation.

A copy of this circular is inserted below, and is, at the same time, explanatory of the work undertaken:—

"*Circular.*

Subject: Well Records and Samples.

Department of Mines.

Geological Survey of Canada.

Ottawa, Ont.

Sir,—'The demand for information regarding wells has become so great that the Geological Survey has decided to issue a yearly publication, giving briefly an account of the wells bored in the preceding year. This report is to be published as near the beginning of each year as practicable, and will be sent to all who apply for it. It will

contain the names and addresses of persons doing well work, and will summarize the work done by them in the preceding year.

'In order that no portion of your work may be overlooked in this report, you are requested to inform this office from time to time of the progress of your work, and to forward records and samples of the materials penetrated in your wells.

'That the foreman of the outfit, or the person visiting the wells may not be burdened with a great number of bulky bottles or cans, and an evergrowing accumulation of samples, small canvas bags have been prepared (one of which is enclosed), in which samples may be transmitted through the mails without the payment of postage. As these samples can be mailed as often as the men visit the post office, there is no danger that they will accumulate and become burdensome. For the keeping of a log a convenient pocket memorandum book has been prepared, and will be sent with the sample bags.

'In order to keep in touch with you, and your foreman, a card like the enclosed will be mailed at stated intervals. This will not only serve as a reminder, but will save you some clerical labour.

'This work should enlist your co-operation, for the following reasons:—

'First. Your name and work will be kept before a class of readers interested in well drilling.

'Second. Records of your work will be carefully filed in this office, and will be readily available to you at any time, so that in case your notes are lost they can be duplicated.

'Third. You will aid materially in the study of the geological structure of Canada, a knowledge of which cannot fail to benefit you as a well driller.

'In some cases, where it is requested that the records should be regarded as confidential, the information will be carefully guarded, and used only under the conditions which you stipulate.

'I shall be glad to hear from you regarding this work, and will be grateful to you for any suggestions.

'Very respectfully,

'R. W. Brock,
'Acting Director."

The line of work designated (B), will comprise studies not only of the boring records and their interpretation, lithologically and stratigraphically, but their correlation with others in the same district, and with the geological data otherwise established.

This work will need a wide general knowledge of the geology of the country on the part of the technical officers connected with the branch, for elucidating more special points and details; recourse being had to the literature of the subject and to the help of the various geologists of the staff.

The system of collecting boring records has already been established, and has resulted in the collecting of a number of valuable sets of drillings, which have been duly recorded and filed.

A number of drilling firms have responded to the solicitation of the Department, but it will take some time yet to establish co-operation with the majority. It is believed that the issuance of a first report, which will illustrate the value of such work to the drillers themselves, will go a long way towards ensuring their continued help. For this publication there is a considerable amount of information to be gleaned from various sources. A good deal has already been done in the direction of searching out and indexing this information, as well as in investigating and straightening out the unpublished logs and drillings already in the Department. Much yet remains to be done in the way of searching for and acquiring logs of important wells drilled in past years, where such have been kept by the operators. This will require

time, and entail considerable correspondence, but it is believed that most of this important information can, in time, be recovered.

Acting under instructions, I left for western Ontario the middle of August, and returned the end of September. During this trip a number of those interested in drilling for gas, oil, etc., throughout the district visited, were seen, and investigation made of the whole question of the best way to carry on the work of the branch for the future, and of where information might be available as to borings made throughout these districts in the past. It was found that the latter class of information was practically lost, except in so far as certain people resident in the districts for many years had kept careful records for their own information. Dr. Fairbanks and Mr. McIntosh, of Petrolia, The Imperial Oil Co., and Mr. Jas. Kerr, of Sarnia, and others, were seen, and have promised to render every assistance.

It was intended that the delimitation of the proved limits of the gas and oil pools should have been attempted by local inquiry and the locating of wells by traversing the roads. It was found, however, that apart from the data collected in private hands, as mentioned above, nothing adequate could be obtained for the delimitation of the pools, so that the co-operation promised as above mentioned had to be relied upon.

The possible co-operation of the officials of the local governments in collecting this information has been kept in mind, and a commencement was made by interviewing Mr. Gibson, the Director of the Ontario Bureau of Mines.

About the middle of June, Mr. J. A. Robert, of the Geological Survey staff, was instructed to assist, and with his co-operation the work has been carried on since that date.

Thanks are due to the various members of the staff of the Geological Survey for information and assistance rendered. Mr. H. M. Ami especially has co-operated in the work in determining horizons from the fossil evidences contained in the drillings and in placing at the disposal of the branch his accumulated records and general knowledge of the geology of the country.

Besides the routine of collecting and filing of drillings, the division has already, in a number of cases, performed its promised function of investigating questions sent in for answer, and in getting together the data required, and preparing memoranda for a number of inquirers.

The establishment of complete working relationships with drilling contractors at large will take some time, but already for the time and money available, a most encouraging beginning has been made; and continued effort will doubtless meet with a wider response as the division proves its usefulness to them.

In this line much can be done by the technical officers connected with the work, if the clerical routine can be so arranged to leave them free to keep themselves posted as to the geological data available and bearing upon any districts where important drilling operations are in progress.

They will thus be in a position to promptly meet the needs of operators during the progress of the work, as well as to intelligently interpret the data coming to hand, and to publish in the report of the branch all that is necessary to make it useful to the public.

As the work becomes established, doubtless many questions of interpretation of the borings data will arise which will call for field studies by the officers of the branch. Foor instance. in districts where many holes have been put down, leveling to connect them with a fixed datum would probably result in the delimitation of folds, etc., of the strata having an important bearing on economic questions.

An immense amount of valuable geological data has been lost in the past, but it is hoped that the inauguration of a properly equipped division will prevent such loss in the future.

SECTION OF MINERALOGY.

(Robt. A. A. Johnston.)

As anticipated in the Summary Report of last year, a large share of attention has been paid to the development and improvement of the collections of minerals and rocks which the Department is issuing for the benefit of the educational institutions of the country. Formerly the study of mineralogy in its different aspects was confined, so far as institutions of learning were concerned, to the courses of instruction furnished in the universities and colleges. Of late years, however, as the systems of education in the different provinces have been extended, this subject has been embraced in the curriculum of institutions of lower grade. As a natural result of this, the requirements of the case have become more exacting, and collections of a high order of excellence have been demanded. Through the accession of large quantities of new material this year, the forthcoming collections have been much improved over those issued in previous years; changes will no doubt suggest themselves from time to time, and advantage will be taken of any opportunities to implement these, where they seem to be for the betterment of the collections. The standard collection to be issued this year consists in all of one hundred and fifty specimens, one hundred and five of which are minerals, and forty-five rocks; the arrangement of the rock-division has been supervised by Mr. G. A. Young.

In addition to the demand for the standard collections, there have been lately many requests for small specimens for prospectors' reference, for class use in blowpipe practice, etc. These requests are being met, so far as available material will permit, from chips and small fragments accumulated during the cutting and trimming of specimens for the standard collections. In a few instances special collections of minerals and rocks have been arranged to meet the needs of special cases. The preparation and despatching of these collections has been performed by Mr. A. T. McKinnon, who has devoted the greatest care and energy to the work.

Since writing the last Summary Report, collections of minerals and rocks have been issued as follows (unless otherwise noted it is to be understood that the full 1908 collection of one hundred and forty-five specimens has been sent):—

Province of Alberta:—

Collegiate Institute, Calgary.
High School, Vegreville.
Other institutions: Edmonton Board of Trade, Edmonton.

Province of British Columbia:—

Columbian College, New Westminster.

Province of Manitoba:—

High Schools: Killarney; Melita.
Public School, Stonewall.
Other institutions: College of St. Boniface, St. Boniface; Manitoba Educational Institution, Portage la Prairie.

Province of New Brunswick:—

High School, Salisbury.
Other schools: Summer School of Science, Riverside; Consolidated School, Hampton; 9th Grade School, Kouchibouguac (34 specimens).

Province of Nova Scotia:—

Academy, Amherst.
High Schools: Goldboro; Sherbrooke.
Other institutions: Sacred Heart Convent, Halifax.

Province of Ontario:—

Collegiate Institutes: Fort William; Vankleek Hill; Galt.
High Schools: Oshawa; Essex; Weston; Belleville; Cayuga; Madoc; Brussels; Mount Forest; Plantagenet; Alexandria; Rockland; Williamstown (18 specimens).
Public Schools: Ancaster School, Carluke; Macdonald Consolidated, Guelph; Milverton.
Other institutions: Rideau Street Convent, Ottawa; Hamilton Model School, Hamilton; English and French Training School, Ottawa; Ontario Agricultural College, Guelph (full collection and 45 specimens extra); Queen's University, Kingston (20 small collections for class work); Toronto University (3 specimens); Huron Institute, Collingwood (7 specimens); Mines Branch, Department of Mines, Ottawa (full collection and 22 specimens extra); Department of Agriculture, Ottawa (4 specimens); Immigration Branch, Department of the Interior, Ottawa (72 specimens).

Province of Quebec:—

Schools, colleges, etc.: Couvent de la Congregation, Sorel; St. Eustelle Congregation de Notre Dame, Huntingdon; Academy, Lachute; Notre Dame Convent, Joliette; Les Freres de la Charite, Longue Pointe; Macdonald College, Ste. Anne de Bellevue; St. Frederick's College, Drummondville; Couvent de Ste. Anne, Lachute; Arthabaska College, Arthabaskaville; Academy of the Sacred Heart for Boys, St. Romauld d'Etchemin; Convent, Beauport; Ecole Polytechnique, Montreal (full collection and 159 specimens extra); Redemptorist College, Ste. Anne de Beaupre; St. Elizabeth College, Montreal; Des Freres Marciles High School, St. Hyacinthe; Retraite St. Benoit Joseph, Longue Pointe; Couvent de la Congregation, Victoriaville; Couvent de L'Assomption, St. Germain de Grantham; Couvent de la Presentation, Drummondville; Academy, Knowlton; Sœur Marie de Ste. Amelie (6 specimens); Trappist Agricultural College, Oka.

Province of Saskatchewan:—

High School, Qu'Appelle.
Public School, Grenfell.
Other institutions: Graton Roman Catholic School, Regina.

Collections otherwise distributed:—

Prospectors' reference collection of 16 specimens: V. S. Steffanson, New York; J. G. McMillan, Toronto; Rev. W. J. Wood, Smiths Falls, Ontario.
Other collections: G. S. Mathey, Cooper Institute, New York (54 specimens); Baird & Tatlock, London, England (37 specimens).

The collections for blowpipe practice included 47 varieties of minerals put up in cotton bags and neatly labelled. These were distributed as follows: School of Mining, Kingston; McGill University, Montreal; Ecole Polytechnique, Montreal; University College, Toronto; Dalhousie College, Halifax; McMaster University, Toronto; Ottawa College, Ottawa; Bishop's College School, Lennoxville; University of New Brunswick, Fredericton; Summer School of Science, Riverside, N.B.

The following materials have been secured during the past season for use in the various collections, and for purposes of exchange:—

Donations:—

White Pass and Yukon R. R. Co., per Hon. H. E. Young, Provincial Secretary of British Columbia:—

	Lbs.
Hydromagnesite, Atlin, B.C.	1,000
Granby Consolidated Mining, Smelting and Power Co.:—	
Copper ore, Phœnix, B.C.	1,500
The Mineral Range Iron Mining Co., Limited:—	
Magnetite, Mayo, Ont.	2,000

Collected by officers of the Department:—

Charles Camsell:—	
Chalcedony, Aspen Grove, B.C.	200
Axinite, Nickel Plate mountain, B.C.	200
Dunite, Tulameen, B.C.	500
Pyroxenite, Tulameen, B.C.	500
O. E. LeRoy:—	
Andesite, Phœnix, B.C.	1,000
D. D. Cairnes:—	
Epidote, Whitehorse, Yukon.	1,000
R. L. Broadbent:—	
Hematite, Dunham, Que.	1,600
Granite, Stanstead, Que.	800
Syenite, Mount Johnson, Que.	800
Chlorite, Chester, Que.	300
Chloritic schist, Chester, Que.	200
Slate, New Rockland, Que.	300
Red slate, Acton, Que.	1,000
Steatite, Sherbrooke, Que.	900
Specularite, Shefford, Que.	200
Chromite, Coleraine, Que.	500
Scapolite (pink), Coleraine, Que.	200
Steatite, Broughton, Que.	500
Red granite, Rivière à Pierre, Que.	1,000
Gray granite, Rivière à Pierre, Que.	300
Iron sands, Moisie, Que.	600
Ilmenite, Baie St. Paul, Que.	700
Garnetiferous gneiss, Baie St. Paul, Que.	400
Muscovite, Pied des Monts, Que.	100
Gray granite, Halifax, N.S.	1,000
Granite, Nictaux, N.S.	800
Copper ore, Antigonish, N.S.	200
Specularite, College Grant, N.S.	900
Manganite, New Ross, N.S.	200
Limonite and hematite, New Ross, N.S.	300
Quartz breccia, New Ross, N.S.	600
Gypsum, St. Anns, N.S.	500
Sandstone, Sackville, N.B.	800
Limonite, Brookfield, N.S.	400
Amygdaloid, Morden, N.S.	500
Basaltic trap, Morden, N.S.	400
Magnetite, Clementsport, N.S.	700
Mica-diorite, Welsford, N.B.	1,000
Stibnite, Prince William, N.B.	200
A. T. McKinnon:—	
Dolomite, Ross, Ont.	1,000
Anorthosite, Horton, Ont.	1,000
Beryl, Calvin, Ont.	200
Quartzite (pink), Dryden, Ont.	2,400
Pyrite, granular, Helen Mine, Ont.	1,000
Siderite, Helen Mine, Ont.	1,000
Hematite, Helen Mine, Ont.	2,700
Pyrrhotite, Creighton Mine, Ont.	1,000
Quartzite (white), Waters, Ont.	1,600
Chalcopyrite in quartz, Cobden, Ont.	1,200
Olivine-diabase, McKim, Ont.	1,500
Tuff, Dowling, Ont.	1,000
Andradite crystals, Tudor, Ont.	1,200
Gabbro, Limerick, Ont.	1,300
Garnetiferous schist, Cardiff, Ont.	2,000

	Lbs.
Marble, Faraday, Ont.	3,000
Nepheline-syenite, Dungannon, Ont.	1,500
Pyroxene crystals, Herschell, Ont.	450
Pyroxene crystals in calcite, Herschell, Ont.	500
Feldspars, Herschell, Ont.	2,000
Diopside, Cardiff, Ont.	500
Arsenopyrite, Marmora, Ont.	500
Arsenopyrite in feldspar, Marmora, Ont.	500
Quartzite, Elizabeth, Ont.	500
Granite, Gananoque, Ont.	1,000
Quartz-porphyry, Vaudreuil, Que.	500
Syenite, Vaudreuil, Que.	1,000
Nepheline-syenite, Outremont, Que.	1,000
Hornblende granite, Staynerville, Que.	1,000
Apatite, Templeton, Que.	1,870
Idocrase, Templeton, Que.	200
Rutile, Templeton, Que.	50
Garnetiferous gneiss, Hull, Que.	1,000
Pyroxene crystals in calcite, Hull, Que.	500
Garnetite, Onslow, Que.	400
Diorite, Wakefield, Que.	1,000
Strontianite, Nepean, Ont.	600
Fossiliferous limestone, Hull, Que.	500

During the year extensive and interesting additions have been made to the Museum collections, as will be seen by the following list:—

DONATIONS.

Mr. Geo. E. Valleau, Ottawa, Ont.:—Coal from the Nicola Valley Coal and Coke Company's mine, Middlesboro, Yale district, B.C.

Mr. L. H. Chaperon, Murray Bay, Que., per R. L. Broadbent:—Muscovite crystals from Bergeronnes, Saguenay county, Que.

Mr. G. E. Barnet, Murray Bay, Que., per R. L. Broadbent:—Biotite and muscovite from Pied des Monts, Charlevoix county, Que; samarskite from Maisonneuve, Que.

Mr. A. L. McCallum, Halifax, N.S., per R. L. Broadbent:—Scheelite from Moose River, Halifax county, N.S.

Dominion Coal Co., Glace Bay, N.S., per R. L. Broadbent:—Three blocks of coal from the Dominion colliery, Glace Bay, Cape Breton county, N.S.

Victoria Gypsum Company, St. Anns, N.S., per R. L. Broadbent:—Two blocks of gypsum from St. Anns, Cape Breton county, N.S.

Nova Scotia Steel and Coal Company, Sydney Mines, N.S., per R. L. Broadbent:—Three blocks of coal from the Sydney Mines, Cape Breton, N.S.

Intercolonial Coal Mining Company, Waterville, N.S., per R. L. Broadbent:—Three blocks of coal from the Drummond colliery, Waterville, Pictou county, N.S.

Mr. E. H. Gladwin, Truro, N.S., per R. L. Broadbent:—Scheelite from the Torquay gold mine, Halifax county, N.S.; limonite from Brookfield, Colchester county, N.S.

Canadian Antimony Company, Lake George, N.B., per R. L. Broadbent:—Stibnite from Prince William, York county, N.B.

Cumberland Railway and Coal Company, Springhill, N.S., per R. L. Broadbent:—Three blocks of coal from Springhill mine, N.S.

Mr. William Ahearn, Ottawa, Ont.:—Micanite prepared from the phlogopite of the Laurentide mica mine, Kingsmere, Wright county, Que.

Mr. Edward Ardley, Montreal, Que.:—Native arsenic from the corporation quarry, Montreal, Que.

Dr. A. E. Barlow, Ottawa, Ont.:—Native silver from the Ruby mine, Bucke township, Nipissing district, Ont.; argentite and native silver from the O'Brien mine, Cobalt, Ont.; native silver from the Downey location, James township, Nipissing district, Ont.; native silver (mossy) from the Timagami reserve, Toweganda lake, Nipissing district, Ont.; Cobaltite crystals from the Columbus mine, Coleman township, Nipissing district, Ont.; native silver from the Big Pete mine, Cobalt, Ont.; native silver from the Crown Reserve mine, Cobalt,Ont.; native gold in quartz from the 77 mile post, T. & N. O. R'y, Nipissing district, Ont.; corundum crystal from Craigmont, Renfrew county, Ont.

Captain Bernier, Quebec, Que.:—Native copper and almandite from Albert harbour, Baffinland. Lignite from Salmon river, near Albert harbour, Baffinland.

Canadian Mining Journal, Toronto, Ont.:—Corundum crystal in nephelite from Craigmont, Ont.

Mr. S. Cohen, Cobalt, Ont., per Mr. Arthur A. Cole:—Argentiferous tetrahedrite from the Crown Reserve mine, Cobalt, Ont.

Mr. Patrick C. Cunningham, Sedgewick, Alberta:—Selenite crystals.

Dr. Danby, Richmond, Ont.:—Pyrite crystals from Larder lake, Ont.

Mr. J. Draper, Woodstock, N.B., per Mr. R. W. Ells:—Native gold in quartz from the Cobbler-Sexton mine, Carleton county, N.B.

Mr. C. L. Hansen, Port Arthur, Ont.:—Argentite from Silver Mountain, Thunder bay, Ont.

Mr. Charles Keddy, New Ross, N.S.:—Quartz crystal from Lake Ramsay, New Ross, N.S.

Mr. J. D. Rice, Barrows, Sask.:—Melanterite from township 44, range 28, west of 1st initial meridian, Manitoba.

Mr. F. Soues, Clinton, B.C.:—Natron from Goodenough lake, Lillooet, B. C.; waterworn mass of volcanic rock from Bonaparte river, six miles east of Clinton, B.C.

Mr. E. T. Smith, Prescott, Ont.:—Phlogopite from North Burgess township, Lanark county, Ont.

Mr. J. M. Turnbull, Moyie, B.C.:—Galena from St. Eugene mine, Fort Steele, B.C.

Mr. C. W. Willimott, Ottawa, Ont.:—Tourmaline crystals and lepidolite from Wakefield, Ottawa county, Que.

Specimens collected by officers of the Department:—

H. M. Ami:—Group of apatite crystals showing curved distortions from Carp, Carleton county, Ont.

R. L. Broadbent:—Hematite from Dunham, Missisquoi county, Que.; specularite from Shefford, Brome county, Que.; chalcocite from Chester, Arthabaska county, Que.; bornite and chalcopyrite from Acton, Bagot county, Que.; calcite, fluorite and sphalerite from east side of Baie St. Paul, Charlevoix county, Que.; manganite, limonite, hematite and stilpnomelane from Wallaback lake, Lunenburg county, N.S.; bog iron ore from Macdonald brook, Schooner pond, Cape Breton county, N.S.; specularite and chalcopyrite from College Grant, Antigonish county, N.S.; siderite, chalcopyrite, and pyrite from Copper lake, Antigonish county, N.S.; chalcocite from Tatamagouche, Colchester county, N.S.; magnetite from Clementsport, Annapolis county, N.S.; stibnite from Prince William, York county, N.B.; a series of specimens

from a vein on the Dominion Chrome Company's property, near Little lake, St. Francis, Megantic county, Que.

R. W. Brock:—Pyrrhotite and chalcopyrite from the 100 foot, 300 foot, 600 foot, 1050 foot, and 1200 foot levels, LeRoi mine, Rossland, West Kootenay, B.C.; silver ore from the Mountain Consolidated mine, Slocan, B.C.; sphalerite and galena from the Right of Way mine, Cobalt, Ont.

Charles Camsell:—Axinite from Nickel Plate mountain, Osoyoos mining district, Yale, B.C.; hübernite from Cathedral mountain, Ashnola river, Yale, B.C.

D. B. Dowling:—Anthracite from Bankhead mine, near Banff, Alberta; anthracite coal from the Sedlock seam, Canmore, Alberta; lignite coal from Prairie creek, Athabaska river, Alberta; coal from Coal creek, North Saskatchewan river, Alberta; coal from opposite Big Horn range, North Saskatchewan river, Alberta; coal from Big Horn river, North Saskatchewan river, Alberta; coal from south branch of the Brazeau river, Alberta; coal from Panther river, Red Deer river, Alberta; coal from section 14, township 20, west of the 3rd meridian, Alberta; lignite from Kneehills creek, Alberta; briquets of lignite made from coal from the Alberta Coal Company's mine, Morinville, Alberta; black slate from Dominion creek, Yellowhead pass, Alberta; marl from the Saskatchewan river above Edmonton, Alberta.

R. W. Ells:—Oil distilled from Baltimore shales, Albert county, N.B.

E. R. Faribault:—Beryl crystal, manganese ore, molybdenite, limonite and hematite from New Ross, Lunenburg county, N.S.; scheelite from Moose river, Halifax county, N.S.

E. D. Ingall:—Chalcopyrite and pyrite from the Eustis and Capelton mines, Ascot, Sherbrooke county, Que.

Joseph Keele:—Native copper from White river, Yukon; galena from Little Twelve-mile river, Klondike, Yukon; cassiterite from Hunker creek, Klondike, Yukon; scheelite from Dublin gulch, Duncan, Yukon; ferro-nickel from Pelly river, Yukon; yellow travertine from Athabaska river.

L. M. Lambe:—Gypsum from Hillsborough, Albert county, N.B.; albertite from Albert Mines, Albert county, N.B.

O. E. Leroy:—Calcite crystals from the Granby mine, Phoenix, B.C.

B. Matheson:—Albite crystals from Porter mountain, twelve miles south of Tantalus, Yukon.

A. T. McKinnon:—Limonite from the Helen mine, Michipicoten district, Ont.; diopside from Cardiff township, Haliburton county, Ont.; large magnetite crystal (438 lbs.) from Faraday township, Hastings county, Ont.; arsenopyrite from Deloro, Hastings county, Ont.; beryl from Calvin township, Nipissing district, Ont.; strontianite from Nepean, Carleton county, Ont.

W. J. Wilson:—Erythrite from Cobalt hill, Cobalt, Ont.

PURCHASES.

Specimen of silver ore from the City of Cobalt mine, Cobalt, Ont.

Specimen of silver ore from the Coniagas mine, Cobalt, Ont.

Large specimen (435 lbs.) of dyscrasite-bearing ore from the Crown Reserve mine, Cobalt, Ont.

In addition to the above, the following accessions have been made to the collection of foreign minerals:—

DONATIONS.

His Excellency, the Right Honourable Earl Grey, Governor General of Canada:—Stalactite from Crystal cave, near Hamilton, Bermuda.

R. L. Broadbent:—Sphalerite and calcite from Joplin mines, Missouri, U.S.A.; rubellite and lepidolite from San Diego county, California, U.S.A.; bauxite from Georgia, U.S.A.; cuprite with malachite from Mexico; rose quartz from Black hills, South Dakota, U.S.A.; cinnabar from Tertinqua, Brewster county, Texas, U.S.A., cinnabar from Waitahuna Heights, New Zealand; calamine from Marion county, Arkansas, U.S.A.; zoisite in chalcopyrite from Ducktown, Tennessee, U.S.A.; scheelite from Otago, New Zealand; cassiterite from New South Wales, Australia; limestone from Oamaru, New Zealand; magnetite (lodestone) from Magnet cove, Arkansas, U.S.A.

D. B. Dowling:—Aluminium products from the Pittsburgh Reduction Company, Massena, N.Y., U.S.A.; cassiterite and associated granite from the Dolcoath mine, Canbourne, Cornwall, England.

H. B. Wright, Detroit, Michigan, U.S.A.:—Octahedrite from Burke county, North Carolina, U.S.A.

Since writing the last report, 180 letters have been received, 234 have been despatched; and 316 mineral specimens have been examined and reported on either by letter or through personal interview.

Attention is directed to the following mineral occurrences, most of which are new:—

Albite. Some fine crystals of albite—two of them, Carlsbad twins—from Porter mountain, Yukon, have been brought in by Mr. H. Matheson, Geological Survey.

Axinite in large dark hair-brown crystals and crystalline masses from the contact between monzonite and sedimentary beds on the western slope of Nickel Plate mountain, Osoyoos mining district, Yale, B.C., submitted by Mr. Charles Camsell, Geological Survey.

Beryl. A small translucent blue crystal of this mineral was found in material from New Ross, Lunenburg, N.S., submitted by Mr. E. R. Faribault, Geological Survey. It was also observed in small grains in some sands from Quesnel river and 111-mile creek, Lillooet district, B.C., submitted by Mr. F. Soues, gold commissioner, Clinton, B.C.

Calcite. Five groups of calcite crystals have been brought from the Granby mine, Phœnix, B.C., by Mr. O. E. LeRoy.

Cassiterite. A specimen consisting mainly of quartz holding small quantities of copper and iron pyrites and zinc-blende from a vein in granite on the farm of Henry Winston, near the head of Mill road, north of Gold river, Lunenburg, N.S., submitted by Mr. Ernest Turner, was found to contain about 4 per cent of cassiterite, and about the same amount of scheelite.

Enstatite. Good cleavable masses of enstatite, from Ste. Adele, Terrebonne, Que., were sent in for examination by Mr. A. Groulx, Ste. Adele.

Ferro-nickel. This name is now given provisionally to some fine particles of metallic material found in the sluice boxes of Hoole canyon, Pelly river, Yukon, the examination of which is not yet completed; it contains over seventy per cent of nickel and over twenty per cent of iron; its true origin is a matter of uncertainty, but a few particles have been noted, enclosed in the original gangue, and the examination of these may throw some light on this point. This material has been submitted by Mr. Joseph Keele.

Hübnerite. A small specimen of hübnerite from Cathedral mountain, near the head of Ashnola river, Yale district, B.C., has been brought in by Mr. Charles Camsell, Geological Survey.

Lodestone. In the course of separating the ferro-nickel mentioned in a previous paragraph from associated minerals it was observed that some grains and rolled pebbles of magnetite were strongly attracted to the steel forceps that were being employed for this purpose. Further examination of these showed that they adhered with great tenacity to any iron instrument, and that the larger pebbles were capable of sustaining a very considerable weight, by the force of magnetic attraction alone.

Melanterite. Good crystals of melanterite have been received from Mr. J. D. Rice, Barrows, Saskatchewan, who states the locality of occurrence as township 44, range 28, west of the 1st initial meridian, Manitoba.

Monazite.. This mineral was noted as a constituent of some black sand from Quesnel river, Lillooet, B.C., submitted by Mr. F. Soues, Clinton, B.C.

Platinum. Native platinum was noted in some black sands from Quesnel river, Lillooet, B.C., submitted by Mr. F. Soues, Clinton, B.C.

Pyrochlore? A mineral from Wakefield, Wright county, Que., submitted by Mr. C. W. Willimott, may prove to be this species.

Scheelite. The occurrence of this mineral, in association with cassiterite and other minerals, has already been noted at the head of Mill road, Lunenburg, N.S.; it has also been recently discovered at some of the gold workings on Moose river, Halifax, N.S.;some fine specimens from this locality were exhibited at the Industrial Exhibition, in Toronto, in September of this year (1908); good specimens have also reached the Survey recently from this locality.

Tetrahedrite. A specimen of dolomite carrying tetrahedrite from Lavant, Frontenac county, Ont., has been submitted by Mr. R. W. Brock.

Tourmaline. Fine red and green tourmalines have been brought to the Survey from Wakefield, Ottawa county, Que., by Mr. C. W. Willimott.

In accordance with instructions from Mr. R. W. Brock, Acting Director of the Geological Survey, I left Ottawa on August 29, for the purpose of joining the excursion of the Canadian Mining Institute, at Sherbrooke, Que. On arrival at the latter place, however, it was found that a change in the plans of the Institute would necessitate my going to Quebec, but advantage was taken of the opportunity while in Sherbrooke, to visit, along with Mr. R. L. Broadbent, the residence of Mr. Thomas Houle, some miles out of the city, where it had been reported to the Department there might be seen a specimen showing impressions of human feet. On arrival there Mr. Houle displayed to our view a slab of rock measuring 30″ × 36″, carefully mounted in cement, resting on a low four-wheeled carriage. The specimen proved to consist of the ordinary altered sediments common to the district. On the upper surface were a number—some three or four altogether—of depressions, which showed a curious resemblance to the imprints of a moccasined foot. They were clearly the result of the action of running water whereby some of the soft concretionary-like masses in which the rock abounded had been eroded.

During the year some important changes have been effected in the arrangements in the Museum. At the suggestion of Mr. G. A. Young, he was given permission by Mr. R. W. Brock, Director of the Geological Survey, to engage in a rearrangement of the specimens in the lithological section. The arrangement according to age, which has been heretofore more or less closely followed, has been, to a large extent, abandoned, and the specimens are now arranged petrographically and territorially, a change which has been very favourably commented upon by students and others visiting the Museum. In this work Mr. Young was assisted by Mr. D. S. McIntosh.

During the winter and a large part of the summer, up to the time of his going to the field, Mr. R. L. Broadbent's time has been taken up in rearranging the economic collection, as far as space would permit; the addition of twelve new table cases provided for the installation of over three hundred new specimens. During the latter part of the summer and early autumn, Mr. Broadbent was engaged in collecting material for the Museum, and for the educational collections, in Quebec and in the Maritime Provinces.

Mr. Broadbent wishes here to record his thanks to the following gentlemen for courtesies and assistance rendered during his itinerary: Messrs. Greenshields, Black Lake, Que.; Mr. J. Fraser, New Rockland, Que.; Dr. J. F. Yeats, Dunham, Que.; Mr. G. McIntosh, Beebe Plain, Que.; Mr. H. C. Bosse, Quebec; Mr. John Kline, Halifax, N.S.; Mr. G. H. Duggan, Glace Bay, N.S.; Mr. Chas. Mitchell, No. 6 Colliery, Cape Breton, N.S.; Mr. John Fraser, Sydney Mines, N.S.; Mr. Geo. J. Ross, Antigonish, N.S.; Mr. J. Floyd, Westville, N.S.; Mr. E. H. Gladwin, Truro, N.S.; Hon. A. T. Dunn, St. John, N.B.; Mr. C. N. Crowe, Lake George, N.B.; Mr. Stewart, Springhill, N.S.; Mr. W. McIntosh, St. John, N.B.

During the winter season, and through the summer, until July 23, Mr. A. T. McKinnon's time was devoted to the assembling and shipping of the educational collections. After that date Mr. McKinnon spent about a couple of months collecting in central and northern Ontario and western Quebec. He also superintended the Geological Survey exhibit at the Central Canada Exhibition held at Ottawa in September of this year. He wishes to here express his appreciation of the assistance and advice accorded him by the following gentlemen: Mr. A. P. Turner, Sudbury, Ont.; Mr. R. W. Seelye, Sault Ste. Marie, Ont.; Mr. L. B. Howland, Baptiste Lake, Ont.; Mr. Wm. Hambly, Creighton Mine, Ont.; Mr. James H. Reid, Dean Lake, Ont.; Messrs. Thomas Morrison and Archibald Riddell, Bancroft, Ont.; Messrs. D. B. Wright and James A. Lambe, Deloro, Ont.; Mr. R. E. Cushman, Kingston, Ont.

I must here record my appreciation of the assistance given by Mr. J. J. Lyon in having the specimens and cases in the Museum cleaned and put in proper order.

PALÆONTOLOGY AND ZOOLOGY.

(J. F. Whiteaves.)

PALÆONTOLOGY.

Considerable progress has been made with the preparation of the systematic and annotated list of the fossils of the Corniferous limestone of Ontario, which was commenced in 1907, and referred to in last year's summary report. In this list the term Corniferous limestone is used in the sense in which it was used by Billings and Nicholson, to include all those rocks that intervene between the Oriskany and Hamilton formations; and the word Ontario to that part of the Province which Prof. E. J. Chapman calls the Erie and Huron district. That portion referring to the corals proper has been re-written throughout. It gives the names, with references and a full list of localities, of 67 more or less well known species of Anthozoa, and 8 of Hydrozoa from the Ontario Corniferous. The part which includes the Brachiopoda and Pelecypoda of that formation, has been written during the year 1908. It gives the names, etc., of 63 species of Brachiopoda, and 23 of Pelecypoda. Among the Brachiopoda there are no very striking novelties, but 9 of the species of Pelecypoda are described as new, and these, it is hoped, will soon be figured. These portions of the list are by no means mere compilations, and have necessitated the re-examination and comparison of a large number of specimens. During their preparation the writer has been indebted to Dr. W. A. Parks for the loan of several specimens of Corniferous fossils from the museum of the University of Toronto.

A paper entitled 'Notes on the Pelecypoda or bivalve mollusca of the Chazy formation in Canada, with descriptions of one new genus and four new species from the Chazy sandstone at Hogs Back, near Ottawa,' has been written and published in the *Ottawa Naturalist* for September, 1908. The introductory part of this paper consists of a few notes on the four species of Pelecypoda that were previously known to occur in the Chazy limestone of eastern Canada, and the part which follows is a description of seven species, four of which are new, and one new genus, of this class, from the Chazy sandstone and shale at Hogs Back, collected by Mr. Walter R. Billings, mostly in 1906 and 1907. The paper is illustrated with one full-page plate, with 16 figures.

Another paper, entitled 'Notes on some fossils from the Cambro-Silurian rocks of the Albany River drainage system in north-western Ontario,' has been written, to form an appendix to Mr. W. J. Wilson's forthcoming 'Report on a part of north-western Ontario, in the districts of Algoma and Thunder bay.' The fossils referred to in these notes were collected at several localities on the Kabinakagami river, by Mr. Wilson, in 1903; on the Little Current and Nagagami rivers, by Mr. Wilson and Mr. O. O'Sullivan, in 1903; on the Drowning river, by Mr. O'Sullivan, in 1903; and on the Pagwachuan river, by Mr. Wilson, in 1904. All of these streams are tributaries of the Albany. These fossils seem to indicate two different geological horizons in the Cambro-Silurian system, and two in the Silurian. The Silurian Stromatoporoids in these collections have been either determined or described by Dr. W. A. Parks, who has published a short account of them in the *Ottawa Naturalist* for April, 1908.

A third paper, on some fossils from three localities on the Nordenskiold river, Yukon Territory, collected by Mr. D. D. Cairnes, in 1908, has been written for publication as an appendix to Mr. Cairnes' report. These fossils, which are neither so

numerous nor so perfect as one might wish, are all clearly Jurassic or Cretaceous. They seem to indicate a geological horizon that may be synchronous with part of the Queen Charlotte Island formation of Dr. G. M. Dawson.

A few fossil Brachiopoda from the Gravel river, Mackenzie, which are apparently of Devonian age, have been determined for Mr. Keele, and a few fossils from the Guelph formation of Ontario have been examined for Dr. Parks.

ZOOLOGY.

Two short papers, descriptive of some zoological specimens of special interest, that have recently been added to the 'Survey' collection, have been written for the *Ottawa Naturalist.*

The first of these papers consists of some notes on a specimen of the Olympic Vole *(Microtus macrurus)* from Metlakatla, B.C.; and on an egg of the Rhinoceros Auklet *(Cerorrina monocerata)* from Lucy island, near Metlakatla; both presented by the Rev. J. H. Keen, of Metlakatla. It was published in the *Ottawa Naturalist* for December, 1907, which, however, was not issued until January 23, 1908.

The second consists of notes on a specimen of the Least Weasel, or Bangs' Weasel *(Putorius rixosus,* Bangs) collected by Mr. Keele on the Ross river, Yukon Territory, in January, 1908; on a specimen of the Alaskan Lemming Mouse *(Synaptomys wrangeli)* from Metlakatla, and on a male bird of the Rhinoceros Auklet, from Lucy island, both presented by Mr. Keen, in 1908. This paper is now in the printer's hands.

A number of recent shells, from various localities, have been named for the museum of the St. Laurent Convent, near Montreal.

EXECUTIVE.

Up to November 1, 1908, the duties of Acting Deputy Minister were performed by the writer. During the absence of Mr. Brock, in the field, from August 14 to October 28, 1908, the office work of the Director, also, was performed by the writer. The additional duties necessitated by the appointment of the writer to the position of Acting Deputy Minister, on May 28, 1907, have taken up much of his time, and added greatly to his official responsibilities.

ADDITIONS TO THE PALÆONTOLOGICAL AND ZOOLOGICAL COLLECTIONS IN THE MUSEUM OF THE 'SURVEY.'

The following specimens were received in 1908, either from members of the staff, or from employes of the 'Survey':—

Fletcher, Hugh:

Collection of fossils from the Dictyonema shales of Kings county, N.S.

McConnell, R. G.:

Six fossils from the Cretaceous rocks at Texada island, on the west coast of British Columbia.

Lambe, L. M.:

Collections of fish and plant remains from the Albert mines and Belliveau, N.B., and from Horton Bluff, N.S. Also a collection of plant remains from Taylor village, N.B.

Wilson, W. J.:

A large collection of fossil plants, etc., from several localities in southern New Brunswick.

Two slabs of *Archæozoon* from Green head, narrows of St. John river, N.B.

Ami, H. M.:

About 100 fossils from the Lowville and Pamelia formations at Barriefield hill, Portsmouth quarry, and other localities in the Kingston district, Ontario.

One hundred and fifty fossils from the Black River, Lowville and Pamelia formations, near Clayton and Watertown, in the State of New York (for correlation purposes and comparison).

One hundred Cambro-Silurian fossils from localities near Ottawa.

About 300 specimens of Carboniferous marine invertebrata from Black Rock, West Bay shore, Parrsboro, N.S.

One hundred specimens of fossil plants, etc., from Pleasant Valley coal pits, Antigonish county, N.S.

Eighty specimens of fossils, plants, etc., from Big Marsh coal pits, Antigonish county.

Fifty specimens of fossil plants from shaft at Curly Dan's (Macdonald), near Big Marsh P.O., Antigonish county.

Eighty specimens of fossil plants, etc., from the dump, Acadia coal mine, Westville, Pictou county, N.S.

Two hundred and fifty fossiliferous concretions from the Pleistocene clay at Besserer, near Ottawa.

Five hundred specimens of marine invertebrata from the Pleistocene deposits at Les Grandes Bergeronnes, below Tadousac, Quebec.

O'Sullivan, Owen:

Small collection of Palæozoic fossils from the Shamawatta and Severn rivers, and from the south coast of Hudson bay.

Johnston, W. A.:

About 150 specimens of Cambro-Silurian fossils from various localities in central Ontario, including some fine specimens of crinoidea, cystidea and starfishes.

Cairnes, D. D.:

A small collection of Mesozoic fossils from three localities on the Nordenskiold river, Yukon Territory.

Malloch, G. S.:

Forty-four specimens of fossil plants and shells from the coal-bearing Kootanie formation, and from strata underlying and overlying it in the Big Horn coal basin, between the North Saskatchewan and its tributary the Brazeau. Also 4 specimens of fossil shells from the end of the first range south of the Saskatchewan river, and one specimen of a Brachiopod from the fourth range south of the Clearwater river.

Keele, Joseph:

A few Palæozoic fossils from various horizons on the Ross river, Yukon Territory, and Gravel river, Mackenzie.

One Mink, one Kit Beaver, and a specimen of the Least Weasel *(Putorius rixosus)* from Ross lakes, Yukon Territory.

Winter skin of porcupine, from the Stewart river, Yukon Territory.

Skull of grizzly bear, from Ross river, Yukon Territory.

Skull of white whale, from Beaufort sea. (Presented by Major Jarvis, of the N.W.M.P.)

Camsell, C.:

Clutch of two eggs, of the Calliope Humming bird *(Trochilus calliope)*, taken at Princeton, B.C., in June, 1906.

McInnes, W.:

A few specimens of fresh-water shells from various localities on the Churchill and Sturgeon-weir rivers, in the Province of Saskatchewan and the North West Territories.

Young, Charles H.:

Pair of each of the Red-Eyed Vireo, Palm Warbler, Maryland Yellow-throat, Chickadee, Tree Swallow, Great Crested Flycatcher, and Wilson's Thrush, with nest and eggs, from near Ottawa.

Large collection of recent marine sponges from the coast of British Columbia.

Over 150 starfishes, 195 crabs and Hermit crabs, 30 cirrhipedes, 50 mollusks, and about 45 bottles of marine fishes, in alcohol, from Departure bay, Vancouver island.

The additions to the palæontological and zoological collections in the Museum during 1908, from other sources, are as follows:—

By presentation:—

A.—Palæontology.

Grant, Colonel C. C., Hamilton, Ont.:

Thirteen fossils from the Niagara chert at Hamilton; two Silurian fossils from Grimsby, and five from the Cambro-Silurian drift at Winona.

Macrae, Stewart, St. Andrews, Manitoba:

Two Cambro-Silurian fossils *(Orthis proavita,* W. and S.), and cast of interior of a *Murchisonia,* from Bear rock, near Fort Norman, Mackenzie river, collected by Mr. Joseph Hodgson.

Specimen of fossil coral *(Cyathophyllum),* picked up on the surface of the ground about 30 yards from edge of bank of Red river, at St. Andrews, about a mile above the rapids.

Five fossils broken out of a block of limestone lying about 100 yards from the west bank of the Red river, a mile and three-quarters above the rapids at St. Andrews.

Nicol, Prof. W., Queens University, Kingston:

Specimen of a fossil coral *(Tetradium Saffordi),* collected at Kepler, near Elginburg, Frontenac county, in September, 1907.

B.—Zoology.

Keen, Rev. J. H., Metlakatla, B.C.:

Female of the Olympic Vole *(Microtus macrurus).* Skin, with skull. Animal captured at Metlakatla, August 28, 1907.

Alaskan Lemming Mouse *(Synaptomys Wrangeli).* Taken at Metlakatla, November 2, 1899. Skin of male, with skull.

Rhinoceros or Horned Auklet *(Ceratorhina monocerata).* Skin of adult male, taken at Lucy island, near Metlakatla, April 24, 1907. Egg of a bird of the same species taken at Lucy island in June, 1907.

Boutellier, R. S., Sable island, N.S.:—

Nest and set of four eggs of the Ipswich Sparrow *(Ammodramus princeps),* from Sable island.

Taylor, Rev. G. W., Wellington, V.I.:

Specimen of a marine sponge *(Aphrocallistes Whiteavesianus,* Lambe), brought up on a cod hook near Nanaimo, in December, 1907.

Tufts, R. W., Wolfville, N.S.:

Set of four eggs of the Oven-bird or Gold-Crowned Thrush *(Seiurus aurocapillus)* from Black river, Kings county, N.S.

Fletcher, Dr. James, Ottawa:

Two specimens of a Pecten *(P. hastatus)*, from Departure bay, Vancouver island, one encrusted with a sponge *(Myxilla parasitica,* Lambe).

By purchase:—

One egg of Cassin's Auklet *(Ptychorhamphus Aleutieus)*, from Santa Barbara island, California.

One egg of the Greater Shearwater *(Puffinus major)*, from Chatham island, South Pacific.

Clutch of two eggs of the Pomarine Jaeger *(Stercorarius Pomarinus)*, from Point Barrow, Alaska.

Clutch of three eggs of the Kittiwake *(Rissa tridactyla)*, from the coast of Newfoundland.

Clutch of six eggs of the Harlequin Duck *(Histrionicus histrionicus)*, from Peel river, Mackenzie.

Clutch of eight eggs of the Pacific Eider *(Somateria v-nigra)*, from the mainland opposite Herschell island, Arctic ocean.

Clutch of two eggs of the Little Brown Crane *(Grus Canadensis)*, from the Red Deer district, Alberta.

Clutch of two eggs of the Sandhill Crane *(Grus Mexicanus)*, from near Yorkton, Assa.

Clutch of four eggs of the Black and White Creeping Warbler *(Mniotilla varia)*, from Nova Scotia.

Clutch of four eggs of the Parula Warbler *(Compsothlypis Americana)*, from Nova Scotia.

Clutch of four eggs of the Blackburnian Warbler *(Dendroica Blackburniæ)*, from Nova Scotia.

Female wolf, from the Gatineau valley.

VERTEBRATE PALÆONTOLOGY.

(Lawrence M. Lambe.)

ALBERT SHALES FISH FAUNA.

Early in January, 1908, a study was begun of the Albert shales fish fauna of New Brunswick, with a view to reporting on the genera and species of Palæoniscidæ of which it is composed. Since 1851, when Dr. Charles T. Jackson described a number of species of palæoniscid fishes from the Albert mines, near Hillsborough, Albert county, New Brunswick, little has been done toward the description of this interesting fauna as a whole, although it was known that the shales of this locality held large numbers of exceptionally well preserved specimens. In the autumn of 1907 the Geological Survey received two large collections of fishes from the shales of the Albert mines: one made by Mr. R. W. Ells of this 'Survey,' the other by Mr. James Robertson, of the Albert mines. The material in the 'Survey' Museum, from the typical locality, and from the north-eastern extension of the Albert shales area across the Petitcodiac river, had previously consisted of specimens obtained by Mr. R. W. Ells, in 1876, by Dr. F. D. Adams, in 1877, and by Mr. James Robertson, in 1891.

Field Work.

Acting under instructions, the latter half of July and the month of August, were spent in New Brunswick and Nova Scotia, with the object of making further collections from the Albert shales area, and from certain supposedly correlative beds in Nova Scotia, with a view of definitely establishing, if possible, the geological age of the beds in question—on palæontological evidence.

Some weeks were spent at the Albert mines and in visiting the outcrops of the Albert shales to the south-west as far as Elgin corner. Between this place and the mines an examination of the beds was made at Rosedale, Baltimore, Turtle Creek, and Mapleton, as well as at exposures seen in brooks and near the road. A large collection of fish remains was obtained at the Albert mines, principally from beds exposed on the western branch of Frederick brook, from which exposure the two collections received last autumn were also made. By searching the dump a number of specimens, brought from a low level, were also found. A few plant remains were obtained.

In a north-easterly direction from the Albert mines, across the Petitcodiac river, at Belliveau, and at Taylor village on the Memramcook river, the same shales are found. Putting up at the last named place, where some days were spent, Belliveau was reached by road. At both of these places numerous outcrops of shales occur, from which collections of fossils were made. At Taylor village there is a low cliff extending some distance along the river front. This cliff is mentioned by Sir J. William Dawson in his Acadian Geology, as constituting the best exposure of Albert shales seen by him. The collection from Taylor village consists of plant remains only.

The shales at Belliveau and those of Albert mines have a flora and fish fauna common to both. In each, the plant remains are few in number and represent only two or three species. At Belliveau, not far from the old shaft, in readily splitting shales, similar in appearance to those of the Albert mines, a species of *Lepidodendron,* probably referable to *L. corrugatum,* Dawson, was found.

The shales of Albert mines and Belliveau are similar in character, and their fossil remains are preserved in a like manner; in fact, the Beliveau area between the

Petitcodiac and Memramcook rivers is a continuation to the north-west of the larger Albert mine area. At the Albert mines are found six or more species of Palæoniscid fishes belonging to three typical Lower Carboniferous genera. They belong to the same genera as, although differing specifically from, the fish described by Dr. Ramsay H. Traquair, from the Lower Carboniferous rocks (Calciferous sandstones series), of Eskdale, Scotland. All the species of fishes that have been found so far at Belliveau are included in the Albert mines fauna; the plant remains also, though few in number, apparently represent a flora common to both localities.

After leaving Taylor village, a short time was spent collecting at Horton bluff, Kings county, N.S., from beds exposed in cliffs on the shore at the mouth of Avon river. These beds were placed by Sir William Dawson, on the evidence of their fossils, in the Lower Carboniferous, at about the horizon of the Albert shales, and for many years were so regarded, but lately their assignment to the Lower Carboniferous has been questioned by some geologists, who prefer to place them at the top of the Devonian, hence it was thought desirable to secure further evidence, if possible, of their true position in the geological scale; especially as their age appears to have a direct bearing on that of the Albert shales, the Carboniferous age of which has also been questioned. Accordingly, fossils were collected here.

At Horton bluff plant remains predominate; but the remains of fishes also occur, principally in the form of scales, not in place, as in the beautifully preserved Albert mines and Beliveau specimens, which show the contour of the fish, with the exact shape and position of the fins, but detached and scattered or brought together in considerable numbers, as aggregations. Many of these scales are recognized as belonging to some of the Albert mines and Belliveau species.

A fish bone of considerable interest, as it throws additional light on the age of the beds at Horton bluff, was obtained at this locality during last summer's visit. This bone was sent to Dr. L. Hussakof, of the American Museum of Natural History, New York, who has kindly given it his attention. He pronounces it to be the right clavicle of a Crossopteryian, probably belonging to one of the Rhizodontidæ. Separate teeth, referable to the genus *Strepsodus,* were also found here during the past season. A species of *Strepsodus* found in these rocks has already been described by Sir J. William Dawson, from teeth, scales, and part of a lower jaw with teeth in place, under the name *Rhizodus hardingi,* and is, according to the author of the species, allied to *R. gracilis,* McCoy, from the Carboniferous shales of Gilmerton, Scotland. It is most probable that the clavicle of this year's collection belongs to Dawson's species. The genera *Rhizodus* and *Strepsodus* differ but slightly from each other, and both are known from the Lower Carboniferous of Great Britain, and include characteristic Carboniferous forms. Neither of these genera occur in the Devonian.

Two of the most common species of plants at Horton bluff are *Lepidodendron corrugatum,* Dawson, and *Cyclopteris acadia,* Dawson, both of which have been considered to be typical of the Lower Carboniferous. As mentioned above, a species of Lepidodendron—presumably *L. corrugatum*—was found during the past season at Belliveau. Dr. Jackson in his Report on the Albert Coal Mine (1851), mentions having found remains of Lepidodendra in the shales of the Albert mines, but none were obtained last summer.

It is desirable that an exhaustive study should be made of the fossil flora of the above-mentioned localities, in the light of present palæobotanical knowledge.

The conclusion drawn from the past year's work on the fossils of the shales of the Albert mines and Belliveau areas, and of the Horton Bluff beds, is that these rocks are of Lower Carboniferous age; special reliance being placed on the evidence of the fishes. On palæontological grounds, also, it is believed that the Horton Bluff beds are nearly, if not quite, synchronous with the Albert mines and Belliveau shales.

Considerable progress has been made with the manuscript for my report on the fossil fishes of the Albert shales, begun during the year, and a number of drawings for the illustration of the report have been completed.

My thanks are tendered to Dr. Charles R. Eastman and Mr. Samuel Hensnaw, of the Museum of Comparative Zoology, Cambridge, Mass.; to Mr. Charles W. Johnson, of the Boston Society of Natural History; and to Dr. Frank D. Adams, of McGill University, for the loan of available types and figured specimens of Albert shales fishes, described by Dr. Charles T. Jackson and Sir J. William Dawson.

OFFICE WORK.

A number of fossil corals, collected by Mr. Joseph Keele during the past summer, from four localities on Gravel river, North West Territories, have been determined, and notes supplied as to their structure and the geological horizons indicated by them.

A catalogue of the fossil vertebrata, in the possession of this 'Survey' at the present time, was commenced during the year. So far, it records all the genera and species represented, of the six classes of the vertebrata, with the exception of the Agnatha and the Batrachia, which will be added when time permits. The collection includes many types and figured specimens, and has greatly increased in value in the last few years, by the addition of many species: some of which are new to science, while others had not previously been found in Canada. Of fishes, there are thirty species, belonging to nineteen genera; of reptilia, forty species, of twenty-nine genera; of birds, one species, of one genus; and of mammalia, ninety-five species, of sixty-three genera. This catalogue will be of use in numbering the collection, when it is placed on exhibition in the new museum building. It may also serve as a basis for a descriptive and illustrated guide to the fossil vertebrata in the Museum, if, at any time in the future, it is thought desirable to issue such a publication for general reference.

This year, plaster casts were purchased of the skulls of *Mœritherium lyonsi,* Andrews, and *Palæomastodon beadnelli,* Andrew: primitive Proboscidea from the Middle, and Upper Eocene, respectively, of the Fayum, Egypt. These species are the earliest known members of the family of which the elephants of the present day are the representatives. They were made known to the scientific world through their discovery by British and Egyptian government expeditions of recent years. These skulls are for exhibition in the new museum, as part of a series intended to show the development of the Proboscidea. This series, particularly if the skulls of the two living species of elephants are added, should prove most instructive to students, and of great interest to the public generally.

A few additions have been made to the osteological collection; which, it is hoped, will continue to grow. At present, well mounted, articulated skeletons, representing all the orders of existing vertebrate life, would form a decided acquisition to the Museum.

In May, 1908, a Bibliography of Canadian Zoology for 1907 (exclusive of Entomology) was—with the Director's permission—presented at the annual meeting of the Royal Society of Canada, for publication. This report is now being printed, and separates of it will, it is hoped, be ready for distribution by the Geological Survey before the close of the year.

INVERTEBRATE PALÆONTOLOGY.

(H. M. Ami.)

An appendix covering the palæontology and chronological geology of the area embraced by the Cornwall-Ottawa sheet was prepared for Mr. R. W. Ells' report on this district.

A preliminary examination was made for Mr. Joseph Keele, of the Geological Survey, of a number of fragmentary specimens of graptolites from the Ross and Pelly rivers, Yukon Territory. The fossils are of Ordovician age, the most easily recognized form appearing to be a variety of the almost ubiquitous *Orthograptus quadrimucronatus,* Hall. More slender forms also occur resembling *Leptograpti* or some dicellagraptid.

A small though interesting series of fossils from the Donjec river, Mount St. Elias range, Yukon, obtained by Mr. R. G. McConnell, of the Geological Survey, was examined, and indicates an Upper Carboniferous horizon.

A collection of about fifty specimens obtained by Mr. R. W. Brock in 1906, from the neighbourhood of Rossland, B.C., appears to represent six species which may possibly be referred to the Upper Carboniferous.

Fourteen collections of fossils obtained by Mr. R. A. Daly, geologist of the International Boundary Commission, from the neighbourhood of the 49th parallel in western Alberta and British Columbia, have been examined. These include fossils from the Flathead valley of British Columbia, and various localities in the vicinity of the Tobacco plains. The results obtained lead to the separation of the collections into two main groups: (1) Those referable to the Carboniferous; (2) those referable to the Devonian. The former appear, for the most part, to be closely related to, if not identical with, the fauna of the Madison limestone of the United States geologists; while the Devonian materials are correlated with the Jefferson limestone of Idaho, The bulk of the fauna examined are corals, together with a number of brachiopods and other invertebrates which frequent or inhabit shallow, but clear water seas. I am under special obligation to Drs. G. H. Girty, and E. M. Kindle, of the United States Geological Survey, for valuable assistance in the determination of the material from the Daly collections.

A collection of fossils belonging to the Banff museum, Banff, Alberta, was determined.

A small collection made by Mr. D. B. Dowling, of the Geological Survey, in 1906, from the 'top of the red beds' near Red Deer river, Rocky Mountain park, reveals the presence of strata which have been referred to the 'Permo-Carboniferous' of the Wahsatch section in the United States. These are intermediate between the Upper Carboniferous limestone and Weber quartzite, and underlie the Trias. Dr. Girty, of the United States Geological Survey, examined the material with me, and is satisfied that in Canada the same succession of strata occurs as across the border.

Some progress was made during the past year in connexion with the preparation of a report on the Silurian faunas and formations of the Arisaig shore in Antigonish county, Nova Scotia. Through the kindness of the Director of the American Museum of Natural History, New York city, I was permitted to examine the original specimens described by Professor James Hall, from the same locality.

The manuscript for the 'Bibliography of Canadian Geology and Palæontology for the year 1907,' was prepared for publication, as customary, in the Transactions

of the Royal Society of Canada. A catalogue was also prepared for the Canadian Mining Institute of the various Geological Survey publications relating to the different mining districts of Canada visited by the Canadian Mining Institute in connexion with the mid-summer excursion of 1908.

Acting under instructions from the Director, a visit was made to Vinal Haven, Maine, to confer with Mr. Bailey Willis, of the United States Geological Survey—under whose direction a geological map of North America is now being prepared—concerning questions of correlation and the mapping of Palæozoic formations as developed in Canada.

In August, a few days were spent at Les Grandes Bergeronnes, Quebec, examining the condition of the clay banks; three small slides having occurred subsequent to Mr. McInnes' visit in the spring. A number of fossils were collected from the boulder clay and stratified marine clays and sands.

Acting under instructions of date August 15, the writer proceeded to Clayton, N.Y., to visit, in company with H. P. Cushing, of Western Reserve University, R. R. Rudemann, of the New York State Geological Survey, and E. O. Ulrich, of the United States Geological Survey, typical exposures of Lower Palæozoic rocks, for the purpose of comparing the formations there recognized with those found north of Lake Ontario. While in the district, specimens of the rocks and fossils were collected. Afterwards the party visited certain exposures in the neighbourhood of Kingston, Ontario.

At the localities visited in New York State, the order of succession of the various formations as given by Mr. H. P. Cushing,[1] is as follows:—

Trenton. (Black, somewhat shaly limestones, etc.).
Black River. (Massive black limestones).
Lowville. (Blue, or dove coloured, thin, shaly limestones).
Pamelia. (Blue, and dove coloured limestones, with thin basal sandstones and overlying shales).

Unconformity—

Theresa. (Sandy dolomite).
Potsdam. (White, yellow, and red quartzose sandstone).

Unconformity—

Pre-Cambrian.

The above generalized section applies well to the strata examined near Kingston, where also the general thicknesses of the beds as estimated, appear to vary but little from those in New York State. The strata corresponding to the Pamelia are possibly more arenaceous near the summit of the formation.

There is no doubt that the sedimentary formations, as they occur in the Ontario Palæozoic basin, were formed in a basin distinct from that to the east of the Frontenac axis and its continuation, the Adirondack massif, so that the geological formations of Ontario west of the axis are more closely linked in their nature and origin with those of northern and central New York State than they are with those of the St. Lawrence-Ottawa, and Lake Champlain districts.

THE COAL FORMATION IN ANTIGONISH COUNTY, NOVA SCOTIA.

Since in the minds of some of those interested in the locality there was some doubt as to whether certain areas of Carboniferous rocks in Antigonish county, N.S., had, as the result of former work by members of the Geological Survey, been assigned to their true horizon, I was instructed by the Director to make an independent palæontological investigation. The results obtained corroborate the earlier determina-

[1] Bulletin, Geol. Soc., Amer., vol. 19, p. 159.

tion, and show that in the vicinity of Big Marsh post office and the Pleasant Valley region, there are no Coal Measures proper, and that the strata are of Lower Carboniferous age, and more closely related to the Horton formation of Nova Scotia, and the Albert formation of New Brunswick. Previous experience has shown that, in such lower divisions of the Carboniferous, coal occurs only in rather limited quantities, and of rather impure character.

The characteristic fauna and flora peculiar to the coal areas of Sydney, Stellarton, and Springhill, appear to be entirely absent in the coal-bearing horizons of this portion of Antigonish county. From the strata examined in the immediate neighbourhood of the coal pits at Big Marsh, as well as at Pleasant valley, a species of *Lepidodendron,* resembling *L. corrugatum,* Dawson, as well as fragments of *Cordaites?,* and narrow leaves or stipes associated with scales and other remains of fishes were gathered, and indicate a horizon much lower than that of the Coal Measures.

A considerable amount of prospecting for coal along the outcrop of the coal seam at Pleasant valley near Macgillivray's mill and Big Marsh has been carried on during the past forty years, and more recently bore-holes have been put down and other work done with the help of machinery and of funds from the Nova Scotia legislature.

A thickness of some 4′–6″ has been assigned to the coal seam at Big Marsh coal pits, which forms the most promising exposure examined: consisting of an admixture of coal, coaly shale, and other impurities.

A few days were spent in the Stellarton region, Pictou county, and near Parrsboro, Cumberland county, N.S., securing further palæontological material.

During the past year various collections of fossils have been examined and some time was spent in preparing collections of palæontological and ethnological material for the new museum.

ARCHÆOLOGY AND ETHNOLOGY.

The following accessions to the Museum were made during the year:—

Moberley, Frank:

One stone adze or skin scraper, MacDougall chute, intersection of the Timiskaming and Northern Ontario railway with the National Transcontinental railway. This point is now called Matheson station.

Ells, R. W.:

Two rock masses, consisting of indurated Cretaceous shale or argillite, from quarry where the Haidas or aborigines of the Queen Charlotte islands obtain the material for their carved stone implements. Collected on Graham island in 1905.

Low, A. P.:

Half-size models of three Kinipitu kyaks, with paddle (double ender), etc., used for hunting on inland lakes, northern Hudson bay, 1904.

Abrahamsen, Johan:

Stone spear-head (?) found by shantyman near Massey station, Canadian Pacific railway, Ontario. Collected in 1907. Per H.M.A.

Pierce, E. H. (per Collingwood Schreiber, Esq., C.M.G., Ottawa, Ont.):

Skull of chief of the Skeena River Indians, from the Skeena river, about 53 miles above Prince Rupert, British Columbia. Collected by E. H. Pierce, Esq., Government Inspecting Engineer, Western Divisions of the National Transcontinental railway.

By purchase:—

Newcombe, Dr. C. F.:

Nine Chilcotin baskets of various designs. Chilcotin, British Columbia.

Goodwillie, Rev. J. M.:

Goodwillie collection acquired August 6, 1908, consisting of 714 specimens, including skulls of aborigines, bone implements, Wampum strings and beads, skin scrapers, arrow and spear heads, etc., from various localities in the Province of Ontario, including Craigleith, near Collingwood mountain, Newmarket, Chatham, Thames river, Thorold, Bosanquet, Amherstburg, etc., all collected by the Reverend J. M. Goodwillie, M.A., now of Metcalfe, Ontario.

Price, D. H., Aylmer, Ont.:

Very extensive collection of archæological remains from various localities in Ontario, comprising some 8,215 specimens as per catalogue of specimens prepared by Mr. Price and accompanying the collection. The bulk of this collection was received at the Geological Survey Department in 1904; a number of bone implements were received later and are included in the collection. Catalogue No. 3314, Division of Archæology and Ethnology.

SUMMARY REPORT DEALING WITH THE FIELD WORK IN CONNEXION WITH THE COLLECTION OF PALÆONTOLOGICAL MATERIAL FROM THE DEVONIAN AND LOWER CARBONIFEROUS OF NEW BRUNSWICK.

(W. J. Wilson.)

INTRODUCTION.

My instructions for the past summer's work were to make a collection of fossils, particularly fossil plants, from the Devonian and Lower Carboniferous of the southern portion of New Brunswick, with the object of definitely fixing the geological horizons of the formations found there.

On the Geological Survey maps, the Devonian is shown as occurring in irregular areas, from Point Lepreau to Musquash harbour; at St. John, from Courtenay bay to near Cape Spencer and inland, and over a large area in Charlotte and Queens counties, extending from the St. Croix river to the St. John. The Lower Carboniferous is shown on the same maps: at St. Andrews, Point Lepreau, Emmerson creek to Melvin beach, St. John county, also from Point Wolf to Cape Enrage, Albert county. In the two last places there are areas along the shore mapped as Middle Carboniferous. Inland the Lower Carboniferous rocks are shown in large areas; from Kennebecasis bay to Indian mountain in Westmorland county, and north of the Devonian area already referred to in Charlotte and Queens counties.

Mr. R. W. Ells of the Geological Survey examined these localities in 1906-7, and in the Summary Reports for those years, describes most of the former Lower and Middle Carboniferous areas as Devonian. It has, therefore, been considered advisable to get from these rocks a collection as complete as possible, of the plant remains and other fossils, with a view of determining their exact geological horizon.

Fossil plants have been known to occur at the Fern Ledges, St. John, for a long time; and since 1860, systematic collections have been made at different periods from these rocks and others in the vicinity. The first collections were made by Dr. Geo. F. Matthew and Prof. Chas. F. Hartt, and their specimens were examined and described by Sir J. W. Dawson. Later, collections were made by the writer and others, so that the flora of the Fern Ledges is fairly well known. Within the past three years, collections were made at Kennebecasis island, by Messrs. Ells and Matthew.[1] In the report on the geology of southern New Brunswick by Messrs. Bailey and Matthew, Sir J. W. Dawson gives a list of nine species of fossil plants from Gardner creek, St. John county, which were submitted to him for identification.[2] Besides the above, no systematic work has been done towards making a careful study of the fossil evidence contained in these rocks, especially as regards the plants.

FIELD WORK.

Collections were made during the past summer at St. Andrews, Kennebecasis island, Moosehorn brook in Kings county, McCoy head, Gardner creek, Tynemouth creek, Alma, Cape Enrage, and New Horton, and an examination of the rocks was made at St. Martins, Waterside, Albert county, also on the Nerepis stream at the contact between the Devonian and Carboniferous formations.

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1 Geological Survey Summary Report, 1906, p. 132.
2 Geological Survey Report of Progress, 1870-1, p. 210.

At St. Andrews, the southern part of the peninsula was carefully examined, and parts of Ministers and Hardwood islands. At Brandy cove, a few indistinct plant remains were found, and at Joe point distinct branching fern stems were collected. At Indian point, near the end of the railway track, a fern frond showing indistinct pinnules was found in place. Some fairly well preserved stems, etc., were found off this point. Plant remains were common in places, both on the mainland and islands; but not much determinable material was secured.

The next place examined was Kennebecasis island, near St. John. The rocks forming the western part of this island are gray sandstones, grits, and shales: dipping N. 20°, W. at an angle of 58°. The shale is mostly fine-grained, greenish-gray, breaking in places into irregular conchoidal pieces. These shaly beds contain many fern stems, cordaites, lepidodendra, fronds of ferns and separate pinnules in a good state of preservation. The lepidodendra are especially abundant, and many good specimens were obtained.

A few days were next spent collecting along the shore of Courtenay bay; but very little good material was found. A day was spent with Dr. Matthew examining the rocks for sponge-spicules, in the vicinity of Green head; and another day at Drury cove. The material collected at these places has not been examined carefully, but it does not look promising.

A fortnight was spent at Moosehorn brook, in Kings county. This brook enters the Kennebecasis river about 2 miles below Norton station on the Intercolonial railway, and for over 5 miles, reveals a good section across the rocks under consideration. Red sandstone and conglomerate occur for over a mile down the brook from Campbell settlement. Some of the finer beds contain plants, but none of much value. In descending the brook, to the mouth, gray sandstone and fine dark shale are met with. In some places the beds are vertical, in others they dip at various angles. In two places well preserved plant remains were met with in abundance. A more careful search would probably reveal other similar beds. One good collecting ground is about 5 chains above the wagon road, near the mouth of the brook. The rocks are vertical, and the prolific beds are 4 feet wide. They contain long, round plant stems, small fronds, and separate pinnules of ferns; also good specimens of lepidodendra, cordaites, and branching fern stems. The second locality is from 1½ to 2 miles from the mouth of the brook, and a few chains below the driving dam. At this place the plants are splendidly preserved and consist of fern stems, pinnules, and a delicate plant with very fine thread-like leaves. The water was very low in this stream at the time of my visit, affording an exceptional opportunity for collecting, as the beds near the dam could not have been examined if the water in the stream had been at its ordinary height.

The next place examined was on the shore of the Bay of Fundy, between Emmerson creek and Gardner creek, including McCoy head. All along this coast there are steep cliffs, 100 to 200 feet high, the strata dipping at various angles, mostly from 50° to vertical. Good specimens were obtained at various places, and a large variety of species was collected. Cordaites is very common, and plants which belong to the following genera were found: annularia, aneimites, pecopteris, neuropteris and calamites, besides others which will be described later. Fern stems and tree trunks are common, and *Cardiocarpum crampii,* and other fruits were collected. Just east of Gardner creek, estuarian shells of the naiadites, or anthracomya type, were found in considerable numbers.

A few days were spent in St. Martins and vicinity, especially at Macomber brook, but no fossils were found.

A short time was spent at Tynemouth creek. The rocks along the shore at this place are reddish sandstone, with occasional gray bands and beds of fine shale. They dip S.W. at an angle of 20°-30°. A rich flora was obtained from the finer beds, the genera being similar to those found at McCoy head, and Gardner creek, with some additional species.

An animal track was noted east of the mouth of the creek, on a smooth rock surface below high tide level. The track consists of two parallel slightly curving lines, about 10 inches apart. The depressions are partly obliterated by erosion.

From Tynemouth creek I went to Alma, in Albert county, and examined the shore from Point Wolf to Cape Enrage. Good collections were made from a few points. The rocks between Point Wolf and Matthews head are coarse reddish conglomerates, with very little fine material. No fossils of any kind were seen. Part of this shore was not passable on foot, and while I was there, the wind prevented landing with a boat, so that only a portion of the shore at either end was traversed. Between Alma and Herring Cove, the rocks are well bedded, gray sandstones, dipping S. 30° E. at an angle of 8°-15°, with occasional bands of fine shale. Near Herring cove there are beds of reddish shale interbedded with the gray. Many of these beds contain an abundance of plant stems, poorly preserved, but some good calamites and cordaites, and one small fern frond were found. Eastward from Alma, along the shore, the usual coarse plant stems occur, and many tree trunks were noted in the cliffs. Most of the trees show woody structure and should be easily determinable. East of the breakwater at Alma there is a very fine dark shale, in which were found fish scales and good specimens of ferns of different genera, also a spirorbis in considerable abundance. About a mile and a quarter east of Alma, in a band of black shale, there were many shells in a good state of preservation. These shells are probably the same as those found at Gardner creek, but they have not yet been specifically determined. Fern leaves were found in the same beds.

About half a mile east of Alma, there are marks resembling the track of an animal, on a large block of gray sandstone which has fallen from the cliff. There are three parallel grooves. The two outer ones are over 8 inches wide, and an inch and a half deep. The middle groove has somewhat regular depressions and heights. The extreme length of the track is 19 feet, and from outside to outside it is 32″ wide. This is evidently the track referred to by Dr. L. W. Bailey.[1]

A short time was next spent examining the soft, red sandstones at Waterside, but no fossils of any kind were seen. Then Cape Enrage was examined. Here there is a high, steep cliff of gray sandstone, with numerous bands of fine shale. These rocks are nearly vertical and contain many plant stems and trees. North of the lighthouse steps there is a wide band of fine, fissile schist, in which there are splendidly preserved ferns, but the shale is so soft that it crumbles into small pieces on exposure to the air. In this bed I found *Sphenopteris marginata,* alethopteris and annularia, also calamite, cordaites, and fern stems, almost covered with a spirorbis.

At New Horton, good specimens of coarse stems and tree trunks abound. The last place examined was on the Nerepis river at Clones, where the Devonian and Lower Carboniferous are shown as coming in contact. No fossils were found in either formation, but unfavourable weather prevented an extended examination.

The time at my disposal did not permit of an exhaustive collection from any locality, and I was not able to reach several places mentioned in my letter of instruction. I tried to get a fairly representative collection from as many places as possible, so that when the fossils are studied, and named, a fair knowledge of the age of the rocks may be acquired. I was much surprised at the great variety and perfect state of preservation of the plants in most of the places examined, and there is no doubt that future careful work will be richly rewarded.

Until the fossils are studied I am unable to offer a definite opinion as to the age of the rocks from which they were collected.

I desire to acknowledge my indebtedness to Dr. D. P. Penhallow, of McGill University, and Dr. G. F. Matthew, of St. John, N.B., for much valuable assistance in the prosecution of my work.

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1 Geol. Survey, Annual Report, Vol. XIII., p. 29 M.

SUMMARY REPORT OF THE NATURALIST.

(John Macoun.)

Between the date of my last summary report and my departure for Vancouver island, my time was chiefly occupied in revising the manuscript and reading the proofs of the Catalogue of Canadian Birds. As soon as I was informed that I was to spend the summer on Vancouver island, I began work on a list of the plants known to grow there, and completed this before going to the field. The routine work of my branch increases annually, and a very considerable portion of my time is, of course, devoted to it.

My assistant, Mr. J. M. Macoun, worked chiefly at botany, as there are still many thousand sheets of botanical specimens to be named and placed in the herbarium. The re-arrangement of the matter in the Catalogue of Birds is also in his hands. Mr. C. H. Young has been an invaluable assistant, and during the winter months, in addition to the entomological work for which he was specially engaged, he re-labelled all our mammal and bird skins. Miss Stewart has, as in former years, proved an efficient assistant, and the greater part of the labelling and sorting of botanical specimens has been done by her. The work of my office is in her charge when my son and myself are in the field. During the winter months, 3,141 sheets of botanical specimens were distributed, and 1,732 sheets mounted and placed in the herbarium. Mr. J. M. Macoun had leave of absence for five months, but has now resumed work as my assistant. Owing to his absence, and the unusual amount of report and catalogue work we have had to do during the year, our correspondence was much less than usual, only 593 letters having been written.

As soon as it was decided that my field of labour for the season of 1908 should be Vancouver island, I immediately began to put the knowledge acquired in the summers of 1887 and 1893 in proper shape. When this was done I saw that our knowledge of the birds and small mammals, as well as of general botany, was very extensive. Having conceived the idea that one or two seasons more would enable me to write up the whole natural history of the island, I obtained permission to attempt it. In addition, we had in view specimens of the forest trees of Vancouver island for the new museum, and of the fauna and flora of the sea in connexion with the biological station recently established at Departure bay. Having these various projects in mind, I had Mr. William Spreadborough, who has done such good field work for so many years, commence work at Victoria, on April 1. Here he collected flowering plants, listed all the migrating birds, and obtained the nests and eggs of twenty-four species. Nineteen specimens of rare birds were collected, and 146 eggs. I was able to reach Victoria on May 29, and we immediately commenced to collect the fauna and flora of the sea. We were very successful, and obtained much material.

On June 22 we went to the biological station at the head of Departure bay, and owing to the excellent arrangements there were able to work very successfully. Mr. Spreadborough ranged the country for miles around, and listed birds, collected plants, and selected the various species of trees we desired to obtain. I was employed in collecting from the sea, especially seaweed, which was the chief object of my living at the station.

On July 17, Mr. Spreadborough and I returned to Victoria, to finish up the collecting of plants, and he here selected and obtained some of the rare trees we wished to obtain from the island.

I arranged in the spring for Mr. Charles Young to go to Vancouver island to experiment on the preservation of starfishes and other sea forms which were needed for the new museum. I received word that he would reach Nanaimo on August 1, and going from Victoria to Nanaimo, met him there and took him to the biological station. Through the kindness of Mr. G. W. Taylor, who has charge of the station, we had the use of his boat and dredging apparatus, and were thus enabled to do more exhaustive work than would otherwise have been possible. Our work at the station was inexpensive, as we had food and lodging, and every accommodation, free of charge. Mr. Taylor's library was also put at our disposal. These facilities, combined with the opportunities for discussion with the trained investigators located at the station, made it possible for us to accomplish a great deal more than was expected.

Before leaving Ottawa, I was directed to visit Rossland, for the purpose of examining into the cause of the rotting of mine timbers; so leaving Mr. Young and Mr. Spreadborough to finish the work on Vancouver island, I left Victoria on September 1, and proceeded to Rossland. I descended the Centre Star mine to the 1,600 foot level, and obtained specimens of four species of fungus, which belonged to the genera *Trametes* and *Polyporus,* groups which are noted for their injurious action on timber above ground.

In conversation with the manager of the mine, I suggested painting the posts, as the spores of the fungus must enter the wood to produce injury. I mentioned the methods adopted in the United States, and spoke of creosote, but really all these methods mean the same thing, the keeping of the spores out of the wood, because there can be no rot without fungus, or algoid spores.

Since my return, the Director has mentioned a statement made by Mr. Watson, one of the mining engineers from Europe, that timber used in mines there has been preserved by immersing for a time in a strong saline solution before being used underground. This I consider a complete solution of the difficulty, as no fungus is known by me to grow on trees or other woody matter which is found lying on the seashore. All wood on the seashore is sound, and all wood on the borders of lakes or rivers is rotten. A detailed description of the method referred to above, follows:—

The Treatment of Timber for use in Mines.

A method of treatment of timber, known as the Henry Aitken method, is now used at many collieries. In this process the idea is to soak the timber in water, raised to a temperature of from 190° to 200° Fahr., containing enough common salt to form a thoroughly saturated solution.

The timber should be free from bark, fairly well seasoned, and thoroughly dry.

Any tank, either wood or iron, of a size suitable to contain the timber to be treated will do, and the water should be heated by exhaust steam, or otherwise.

The time necessary for completing the process largely depends on the nature and size of the timber, but two days will, in general, be sufficient.

By sawing off a small part of the timber being treated, it can be seen whether thorough penetration by the salt has been obtained.

When the timber is removed from the treating tank it is soft, and not in a condition for immediate use.

It is dried by being put into a covered shed, or stacked in the open air.

The cost for treating timber by this process averages in Great Britain, about one penny per cubic foot.

Some of the managers of the largest collieries in Scotland, who have adopted the process, write as follows:—

Mr. Maevie, manager Cadzow collieries, Hamilton, regarding the Aitken process for treating the timber for use in mines, states that in his five years' experience he had never seen the least indication of decay in any timber so treated. About four years ago, gears (every alternate one treated) were put in the main return airway of

the No. 3 Pit Ell coal seam, Cadzow colliery. About a year ago, all the untreated gears were replaced, owing to decay. The treated timber is still in use, and in good condition. As regards the contention that the Aitken process reduces the strength of the timber, he had never seen anything to make him think this was the case. Indeed, he had stopped using larch timber, and now used treated Scotch, or foreign fir.

Mr. Ferguson, manager Benarty colliery, Fifeshire, writes that the Aitken process has been in use at the Lochore and Capledrae collieries for upwards of six years, and during that time it has proved a great saving, not only in wages renewing broken timber, but also in the price of wood used, which is now nearly all foreign timber. The treated wood had stood in the return airways for six years, and was quite sound. If this wood had not been treated it would have been replaced twice during the above period. No tree which had been treated had shown the slightest decay during the six years.

Mr. Carlow, managing director Fife Coal Company, Leven, Fifeshire, writes that the Aitken process has been in use for four years.

The following experiments have been made with the process: Two pieces of ordinary fir, 3½″ in diameter and 3 feet long, both weighing 10 pounds before being treated, were selected. One of the pieces was treated by the salt process and the other was not. After being treated it weighed 12 pounds. Both were taken underground and placed in a return air-course, and after eleven months were examined and re-weighed. The untreated timber then weighed only 5 pounds, whereas the treated one weighed 12 pounds, being exactly the same weight as when it was put in. They were put back into the mine and allowed to remain eleven months longer, with the result that the untreated timber weighed 6 pounds, and the treated timber weighed 11¾ pounds. They were again replaced in the mine, and after an exposure of three years they were examined, and while the treated piece was sound, the untreated one was decayed. Besides these tests, observations were made on the treated timber put into main roads, beside other timber not treated. The treated timber remained damp and fresh, while the untreated crown-trees were dry and soft on the outside, showing that decay was in progress.

The amount of salt that timber will absorb depends on the firmness of the wood, and its dryness at the time of treatment. Norway fir absorbs from 15 to 50 per cent of its weight, that is, it becomes 15 to 50 per cent heavier after treatment, while larch crown-trees absorb only 10 per cent.

The cost is about one penny per cubic foot for salt, and one farthing for labour, a total cost of about 1¼ d. per cubic foot.

WORK OF MR. C. H. YOUNG.

Mr. Young reached Nanaimo on August 1, and worked two months at the biological station, leaving there September 28. His day's work commenced with a collecting trip; the remainder of the day being taken up with the preparation of specimens, which often kept him employed far into the night. When necessary I assisted him to collect specimens, and very soon he had a large series of shore species. During the last month he was ably assisted by Mr. Spreadborough, who soon learned to manipulate and prepare the various forms.

While dredging off the head of Newcastle island in August, the dredge brought up, from a depth of 25 fathoms, at one haul, over 60 specimens of a hexactinellid sponge, *Rhabdocalyptus Dawsoni*, (Lambe), a species which had previously been taken at two localities by Dr. G. M. Dawson, while dredging in the Strait of Georgia, one specimen being taken off the mouth of Qualicum river, Vancouver island, in 40 fathoms, and two specimens in the Strait of Georgia, near Comox, in 40 fathoms. Dr. Dawson obtained the type specimen, nearly a foot in length, in 1885. The species has also been collected by Mr. Taylor. None have been taken anywhere else, until last

August. Many other rare and beautiful sponges were taken, and will be named when time permits by Mr. Lambe, and placed on exhibition.

WORK OF MR. WILLIAM SPREADBOROUGH.

Reference has already been made to the work done by Mr. Spreadborough. He was employed from April 1 to the last of September. During April and May he collected plants, listed the migrating birds, and searched for nests and eggs. In all of this work he was very successful. In June, July, and August he continued collecting, and at the same time procured for the new museum specimens of seventeen species of trees native on Vancouver island. The specimens selected are all 5 feet long, varying in diameter up to 2 feet; although the species may attain to a larger diameter. While at the biological station, Mr. Spreadborough assisted Mr. Young in collecting and preparing the starfish, crabs, etc., in that vicinity, when he was not otherwise employed. Both men were indefatigable, and I cannot speak too highly of their work.

COLLECTIONS.

The collections made in August, and September, by Messrs. Young and Spreadborough, comprise:—

One hundred and fifty-six starfishes.
One hundred and ninety-five crabs of various kinds.
Over one hundred sponges of various kinds.
A fine collection of barnacles.
Over fifty bottles filled with specimens in spirits, and a very large collection of marine shells.

Each evening Mr. Young went out with a lamp and net and caught moths and beetles. This collection alone numbers over 600 specimens.

The botany of the island was chiefly my work, but Mr. Spreadborough gathered the greater number of the flowering plants. The collection embraces over 1,100 species of flowering plants, about 400 species of cryptograms, and nearly 150 species of seaweeds. The latter collection was chiefly made at Victoria, and Departure bay.

It will be seen by the above that we made an excellent beginning, and another season's work will enable me to write an exhaustive report on the whole fauna and flora of the island, provided I have the assistance of Messrs. Spreadborough and Young.

Since our return to Ottawa, Mr. Young and myself have been employed arranging the various specimens collected, all of which have turned out well.

A few days since I sent down 21 species of starfish to Prof. Verrill, of New Haven, Conn. In a letter received from him three days ago he says, in part:—

'Have looked over the starfish rapidly. I think there are some among them that I do not know, and some are represented by larger or better specimens than I have had before, and I may wish to figure some of them by photography.'

The collecting of the starfishes was only an experiment; but it is gratifying to be able to report that it has proved an unqualified success.

Since my return, besides attending to the routine of the office, I have named large numbers of plants from Guelph, Galt, St. Thomas, Truro, Winnipeg, Calgary, and from the Experimental Farm. Birds, and small mammals are occasionally received for identification.

In the intervals between this routine work I am engaged on the flora of Ottawa. This work has become a necessity, as the new museum must take a local as well as Dominion position. The local botanists will give their assistance, and we will make as complete a catalogue as possible. The other work I am engaged upon is the identification of the specimens obtained on Vancouver island.

A PRELIMINARY REPORT OF AN ETHNOLOGICAL INVESTIGATION OF THE MACKENZIE DELTA.

(V. S. Steffanson.)

The following is submitted as a preliminary report: the statement of facts in which may be amplified and the conclusions modified after the completion of the field work now in hand. Although this report is of work done under the auspices of the Geological Survey during the summer and autumn of 1908, it is inevitable that it should include to some extent, the results of observations made during a stay in the Mackenzie delta and neighbourhood, from July, 1906, to August, 1907, at the end of which period I began the work which the Geological Survey desired to have continued under its direction.

THE ROUTE.

The Mackenzie delta may be reached by two practicable routes, either by boats down the rivers of the Mackenzie system from Athabaska Landing, Alberta, or by whaling ships from San Francisco, U.S.A. The Mackenzie route is the easier for passengers, but the more difficult for the transportation of freight. For this reason, we had certain supplies shipped from San Francisco to Herschel island, while Dr. R. M. Anderson, a geologist, and myself took the river route, reaching the Mackenzie delta early in July.

THE PEOPLE.

The upper portion of the delta may be considered to be occupied by Loucheux Indians of the Athabaskan stock, while the lower portion belongs more strictly to the Eskimo. Formerly there was but one group, the people who may be called the Mackenzie River Eskimo, but now there are immigrants from the interior of Alaska behind Kotzebue sound, the so-called Nunatamas, and from almost every coast settlement between Cape Nome and Herschel island. It seems probable that in 1889, when the first whaling vessels began fishing off the delta, there were rather more than 2,000 Eskimo between Herschel island and Baillie island, inclusive of the former and exclusive of the latter. At present, 1908, there are less than 400, half of whom are immigrants from the west.

Reasons for Decline in Population.

The chief reason for the decline in population has been the introduction of white man's diseases. These, placed in the order of their destructiveness, are as follows: measles, scarlet fever, syphilis. A number die every year from consumption and ptomaine poisoning, as well as from various diseases not named. Altogether the causes of death in the order of their fatality, may be arranged as follows: measles, scarlet fever, consumption, ptomaine poisoning, gonorrhœa (sp?), syphilis, etc. As is well known, the manifestations of syphilis are so various that its positive determination is difficult, and even medical men would, therefore, differ as to its prevalence where histories of each case are difficult to get.

Among the Eskimo, as everywhere among American races, measles are more fatal than is the bubonic plague among Europeans. Instances have occurred within the

last ten years, where ten out of thirteen individuals in a single house have died in one week; strong men sometimes dying within thirty hours from the appearance of the first symptom. Consumption is not nearly so fatal in these Eskimo communities as among the Indians. It is said that at Fort Wrigley, on the Mackenzie, the number of Indians has been reduced in six years from two hundred to twenty hunters, chiefly by tuberculosis, whereas, among about four hundred Eskimo there have been only eight deaths from this disease in two years. Rheumatism is not uncommon, and spinal tuberculosis is occasionally met with (two cases among four hundred people); while blindness and weak eyesight is rather common among elderly people, chiefly among the men, probably in consequence of frequent snow blindness, as they themselves believe.

Apart from epidemics, the death rate of the Eskimo cannot be considered very high, except as compared with the birth rate. They are, however, an extremely unprolific people. I have never heard of more than four children in a family, and have never seen more than three, while one child or none, is more common than two or three. The death rate among children is not excessive, but it is evident that even were there no deaths in infancy, population must decrease from year to year.

ESKIMO VILLAGES.

Eskimo houses were at various times in the past built at virtually every point of the coast between Herschel island and the Mackenzie river, but the first place west of the Mackenzie river recognized as a regular village site is Escape reef, located about 15 miles west of the most westerly mouth of the Mackenzie. From this place, going eastward, one crosses the entire delta before coming to the next recognized village site, near the south end of Richard island. Although there were doubtless a considerable number of people in villages west of the Mackenzie, three-quarters at least of the population must have been east of the delta proper. The largest villages were on the river between Richard island and the mainland, namely, Kopuk and Kittegaryuit, although to the east along the coast, and southwards to the Eskimo lakes, were numerous and populous towns whose ruins are rich in archæological material.

PHYSICAL CHARACTERISTICS.

At Herschel island, at certain seasons, are gathered together several hundred Eskimo, and a corresponding number of white whalers. The general impression one gets from this mixed assembly is that the whites and Eskimo are of the same average stature, though measurements indicate that the whites average a trifle taller, the general smallness of certain tribes reducing the average. Other tribes, however, such as the Nunatamas, fully average the stature of northern Europeans.

In general, the features of the Eskimo become more Mongolian in type as one goes west through Alaska. The Mackenzie River people proper, have a head tending in general to narrowness of skull, the eyes level or with a suspicion of the Mongol slant, noses of as varied types as Englishmen, high cheek bones, a greater tendency to lobeless ears than Europeans, and stiff black hair. The hair is worn cut level with the eyebrow in front but hanging to the shoulders behind, and the crown of the head is tonsure cut. The men are well proportioned, agile, and walk with a swing approaching the English cavalry stride. There is a greater difference in the stature of the sexes than among whites, the women being considerably smaller than white women.

Head form being in general the most important somatological character racially, there is appended a tabular summary of head measurements of three groups of Eskimo, and also of some Loucheux Indians.

78 KOGMOLLIKS.	84 NUNATAMAS.	15 PT. BARROW.	59 LOUCHEUX.
No. of Individuals.	No. of Individuals.	No. of Individuals.	No. of Individuals.
Index 66—1	Index 66—	Index 66—	Index 66—
67—	67—	67—	67—
68—1	68—	68—	68—
69—1	69—	69—	69—
70—3	70—	70—	70—
71—2	71—	71—	71—
72—2	72—	72—	72—
73—10	73—	73—	73—
74—8	74—1	74—	74—2
75—7	75—	75—3	75—2
76—14	76—2	76—	76—0
77—9	77—6	77—4	77—4
78—10	78—5	78—2	78—6
79—3	79—8	79—2	79—5
80—5	80—10	80—	80—6
81—1	81—7	81—2	81—10
82—1	82—10	82—1	82—6
83—	83—6	83—1	83—5
84—	84—5	84—	84—5
85—	85—6	85—	85—3
86—	86—6	86—1	86—1
87—	87—3	87—	87—2
88—	88—5	88—	88—1
89—	89—2	89—	89—1
90—	90—1	90—	90—
91—	91—	91—	91—
92—	92—	92—	92—
93—	93—1	93—	93—

RELATIONS WITH INDIANS.

Both east and west of the Mackenzie we know of cases of protracted friendly contact and trade relations between Eskimo and Indians, but in recent times at least, there was continuous hostility between the Mackenzie Delta Eskimo and the Loucheux Indians. It seems that in general the Eskimo were the more aggressive and now and then made incursions far into the Indian country, and it is certain that, in recent times, the Indians have been in much greater fear of the Eskimo than the Eskimo of the Indians. After the establishment of the Hudson's Bay Company's post at Macpherson, on the Peel river, attempts were made by its officers to establish peace between the two races, in order to facilitate trade. Although comparatively timid in open battle, hostilities were again and again precipitated by the treachery of the Eskimo.

The last pitched battle occurred in the sixties, when a party of Eskimo, all able-bodied men and women, attacked a much larger band of Loucheux Indians, consisting largely of old men, women and children. None of the Eskimo were killed, but only two of the Indians escaped.

After this fight the Company called together all the relatives of the slain Loucheux, upon whom rested the duty of blood-revenge, and paid them in trade goods what was considered a fair blood-price. The Eskimo were then informed that no revenge would be taken, and although distrust existed for many years, both tribes have since then, each year, traded at Macpherson and no deeds of violence have occurred. The two races are now on perfectly friendly terms.

COMPARISON OF INDIANS AND ESKIMO.

While on a journey by a whaleboat from Fort Macpherson to Herschel island, I had a good opportunity to compare the Indian with the Eskimo under identical con-

ditions. Both were receiving the same remuneration for their work, but the way in which they carried it forward was markedly different. The Indians were lazy, shirking and complaining of even the little they had to do, and always eager to go ashore and camp. They whined about their uncomfortable beds on board our boats, although they seemed able to drop asleep at any time and to sleep on indefinitely. On the other hand, the Eskimo, Memoranna, worked hard during the day, stayed up at night to keep the boat in the current, and took the greatest interest in our progress and the greatest pains to see that everything went on well. At one time he was over fifty hours without sleep, and throughout the entire trip got his sleep irregularly; and yet was ever the soul of good humour, while some of the Indians were sulky even while they were eating.

The status of women among the two races may be said to be diametrically different. Among the tribes I have had the opportunity of observing, the Indian women are considered inferior to the men and seem to recognize themselves as such. Walking between camps they will follow at some distance behind the men, speaking little and then only to each other and the children. When a discussion is going on in the tent, they never venture an opinion unless spoken to; their whole attitude is one of sheepish inferiority. With the Eskimo the story is different. Their women are more nearly the equal of the men than women are among the white people, for there is none of the affected superiority and real depreciation which is their lot amongst most European nations. An Indian considers it a degradation to have to do any sort of women's work; to eat with them or assist them under ordinary circumstances; but among the Eskimo of the mouth of the Mackenzie, men and women habitually eat together. An Eskimo man will sew cloth, tan skins, prepare food, tend the baby, or in fact, do anything that comes to his hand, while the women will, in time of necessity, do man's work of any kind.

Perhaps the most salient point of difference between the two races, however, is that an Indian tries to appear dignified under all conditions, while apparently an Eskimo never takes pains to vary his conduct to impress others. When one approaches an Indian village, a few women or boys may come out to meet the stranger, but ordinarily the men, and especially the more important men, will await one in the tent, receiving one with dignity and what might be called formality. If a strange boat approaches an Eskimo village, all the inhabitants not only manifest the liveliest interest, but the most prominent men are the first to wade into the water to help pull the boat ashore.

In energy and resourcefulness there seems to be a no less marked difference. An experience of Mr. Daniel Cadzow, a trader at Rampart House, on the Porcupine river, will illustrate this. Indians of various tribes had traded with Mr. Cadzow, but no Eskimo until the winter of 1906-7, when exceptionally hard hunting conditions in the mountains northward forced some of the inland Eskimo to follow the deer far south into the Indian country in the neighbourhood of Mr. Cadzow's trading post. Almost starving, some of the Eskimo came to the store asking that food be given them on credit until they could pay for it in furs and deer meat. To the surprise of Mr. Cadzow, when food was dealt out to the Eskimo, they loaded it on their sleds and started off. Indians, under similar conditions, would have made a great feast, eaten up all that had been given them and then have come back whining for more. In fact, that was precisely what a large crowd of Indians did do at this very time.

Seeing the difference between the two people, Mr. Cadzow went to the Indians, gave them a few days' rations, then practically drove them away, saying that he would give them nothing more to eat unless they hunted like the Eskimo. The Indians went off, but in about three weeks sent messengers asking for more food, saying that they had been unable to hunt on account of the excessively cold weather. Later on it developed that they had gone only a few miles from Rampart House and had kept in camp until all their food was eaten. About this time the Eskimo returned to the

trading post, but instead of asking for more food, they now brought their sleds loaded with deer meat and valuable furs.

The incident reported from Rampart House is typical of the experience of everyone I know who has dealt with both Indians and Eskimo.

HONESTY OF THE ESKIMO.

Nothing more clearly illustrates the general honesty of the Eskimo than their practice of storing household goods, often including valued articles easily carried off, in unprotected places. These are seldom disturbed, excepting in the case of food, when it is an unwritten law that anyone who is in need may openly help himself. In the old days apparently no restitution was made, but since the Eskimo began to acquire ideas of private ownership from the whites, the custom of making payment for food taken from abandoned stores is becoming established. Though the character of everyone is well known, only two natives of the Mackenzie delta are publicly recognized as thieves, and one of these is the only known murderer now living in the community.

CONTACT WITH WHITES.

Although Franklin, Richardson, Pullen, Hooper and others, saw groups of Mackenzie River Eskimo at various times between the twenties and sixties of the last century, it is probable that the influence of the white man upon their lives and habits was small up to the time of the cessation of Loucheux hostilities and the beginning of continuous trade relations with the Hudson's Bay Company. Even then the change must have been slow. In the late sixties, Roderick McFarlane made his first trading trip to the Anderson River district, east of the Mackenzie. After trading peaceably with an encampment or two of Anderson River natives, he was robbed of all he had by a party of delta Eskimo who had been told of his expedition by Hare River (or Loucheux?) Indians. Subsequently, McFarlane, acting for the Hudson's Bay Company, succeeded in establishing a trading post on the Anderson river, and maintained it for a few years until an epidemic killed off most of his customers.

At Fort Macpherson, on the Peel river, trading with the Mackenzie Eskimo practically began in 1872, when the present factor, Mr. John Firth, took charge. For many years the Eskimo came only in large armed parties, and established what might be described as a belligerent camp in the Peel bottoms a quarter of a mile from the fort. They were admitted to the post only in small groups, and sent beyond the walls when the trading was done, while the stockade was barred at night and guards set. Evidently trade relations of this sort could have no very rapid culture influence upon the natives.

In 1889 a new influence came into the field when the first whalers began their fishing around Herschel island, and since then the change in manners and customs has been rapid. Some of the natives have taken service aboard the ships, and speak English tolerably well; a considerable number of the native women have lived for years with white men, afloat and ashore; and considerable dependence has come to be placed on imported foods and trade wares. All this applies, however, much more largely to the people living west than to those living east of the river mouth.

RELATIONS OF WHALERS TO ESKIMO WOMEN.

Among the Eskimo no ceremony is necessary to constitute marriage, the desire and consent of the parties concerned being all that is required, and divorce is equally easy. When an Eskimo couple are married they remain married as long as suits the convenience of both parties, and the union may be dissolved by either without the consent of the other, and without prejudice to the social standing of either. The same rule applies to the relations between whalers and Eskimo women, though in this case the divorced Eskimo woman has the advantage of having acquired knowledge of white

men's ways, hence is more desired as a wife by the Eskimo men, who appreciate the value of a wife who can give competent advice in matters of trade with the whalers. The woman, therefore, rises in social standing by having been the wife of a white man. Besides this, she usually acquires wealth, for the tents and camping outfit which were used jointly by herself and husband are left behind by the whaler when he goes south. She has, therefore, for the purpose of her second marriage, acquired increased social standing and a substantial dowry.

While not advocating the continuance of the conditions now prevalent, I do consider that the matter should be approached calmly, and it should be definitely recognized that, from the point of view of the Eskimo, no atrocities are being committed in the north. Things that are wrong are wrong from our point of view, and it is with this understanding that we should proceed to rectify them.

THE ESKIMO OF HERSCHEL ISLAND.

Previous to the first coming of the whalers in 1889, there were probably few Eskimo immigrants in the Mackenzie River country. There are traditions of occasional visits, perhaps one only, from Point Barrow. A middle-aged man named Memoranna told me that when he was young, a crew of Point Barrow natives in an umiak, came one autumn to Herschel island. They were on what might be called a voyage of exploration, though the Mackenzie River and Point Barrow men met yearly for trading purposes at Barter island, Collinson point, or some neighbouring place, and were, therefore, more or less familiar with each other. The Herschel islanders had a very bad reputation for turbulence, dishonesty, and even treachery, and the Point Barrow people, therefore, left their wives, children and property behind in the neighbourhood of Coldville delta.

The visitors, however, were well received at the island, were entertained for a while, and then began a sort of triumphal march eastward, going from village to village with a large company of followers, finally penetrating as far east as Baillie island. Here the leading man of the Point Barrow party married a Kogmollik woman, who became his second wife. In the latter part of the winter the party returned to Herschel island, and when navigation opened, proceeded to Point Barrow. It is manifest, therefore, that there was some intercourse and intermarrying between the Mackenzie River Eskimo and others.

Shortly before 1889, the first Nunatamas or inland Eskimo, arrived at Herschel island. People who were used to dealing with the Point Barrow Eskimo, and found no trouble in understanding their language, understood at first scarcely a word of the dialect spoken by the inlanders. After being together for a week or so, however, they found little difficulty in conversing; but it seems that the Nunatama dialect differs more from that of the Herschel islander than does the Point Barrow dialect from either.

With the first whalers, and practically every year since, there have come Eskimo immigrants from the islands in Bering sea, and from various points as far west as Point Barrow or the mouth of the Yukon. Sometimes they have merely landed, or they may have stayed a year or so, but not infrequently both men and women have taken up permanent residence at Herschel island or farther east. A large number of the Nunatamas have come either overland by themselves, or eastward from Point Barrow or from Kotzebue sound as passengers on whaling ships. The result is that the population in the Mackenzie delta is becoming mixed in blood, has already been deeply influenced in its culture characteristics, and has taken up many strange words into the spoken language. A few of these borrowed words are English, an occasional one Indian, but most of them are forms of Eskimo words, which previously were not in current use at the mouth of the Mackenzie.

RANGE OF THE MACKENZIE RIVER ESKIMO.

It seems that these people, collectively known to the whalers as Kogmolliks, always had a feeling of solidarity, although they had no common word to designate themselves as a group, the inhabitants of each village being known by the name of their dwelling place. They had a certain territory which they recognized as theirs; and although a man seldom lived in the same place two winters in succession, he was very unlikely to build his house beyond the regular ranging ground of his people. Their western limit seems to have been pretty definitely placed at the east end of the long lagoons coming down from Barter island and ending some 30 or 40 miles west of Herschel island. What their eastern limit was is less certain, though it is evident they recognized themselves as a different people from those of the neighbourhood of Baillie island. Their south range was even more indefinite, for there they were on the frontier of an actively hostile people. In summer they hunted far up the Anderson, and in armed parties ascended the Mackenzie, occasionally to the neighbourhood of Fort Good Hope. Their permanent houses in the Mackenzie delta were probably never built farther south than Point Separation, some 20 miles north of the present site of Fort McPherson.

MATERIAL WELL-BEING.

It is commonly assumed that the Eskimo occupy the least desirable portion of the American continent, and have been crowded into it from more favourable localities by a more powerful people (the Indians) to the south. This generalization is not only incorrect as a whole; but tacitly assumes as true or evident several things which may appear evident but are not true.

Is the country immediately to the south, from which the Eskimo must have come if crowded from anywhere, superior to the coast? The temperature in the Indian country, say at Fort McPherson, falls below 70° F., while on the coast it has never been known to go below 55° F., therefore, the coast is evidently considerably warmer in winter. Fuel is, anywhere between Point Barrow and Cape Barry, as abundantly supplied by driftwood as it is to the south by trees, although, as a matter of fact, the Eskimo use wood for fuel in summer only. The same game animals, with unimportant exceptions, that abound in the Indian lands are hunted under similar advantages by the Eskimo, who, in addition, have the animals peculiar to the sea, viz., the various seals, whales, and polar bears. Fish are as abundant in a river's lower reach as they are in its upper and are of better quality, and, in addition, there are the salt water fish. The net result of the comparison shows a balance of opportunity for well-being decidedly in favour of the Eskimo. If then, they are not in the least favourable locality, it is not probable they have been crowded into it since little force is needed to compel a shrewd people to occupy the best localities. Further, it is evident that both now and when first seen by whites, the Athabaskan Indians are, and were, incapable of driving the Mackenzie River Eskimo anywhere. There is no case known of their having done anything of the kind, but instances of the reverse are definite, if not numerous.

The Mackenzie Eskimo live (from the food-gathering point of view) in a good country, and they have the disposition to make use of their opportunities. On the other hand, the Loucheux Indians to the south of them starve most years, and almost every winter lose a number of their dogs through hunger. There is not a case of starvation, within the memory or tradition of the Mackenzie Eskimo, nor within the record or present knowledge of whites. Their winters of great hardship are those when the supply of blubber so nearly gives out that they have to save it for food and are forced to use wood to heat their houses.

That they lived well in the past is a matter of tradition and in the memory of old men living; that they live well now is a fact to be seen by all who visit them. My first meal in an Eskimo house (near Herschel island) comprised bacon, fresh deer and seal meat, fresh and dried fish, good yeast bread and butter, tea and coffee with

sugar and canned milk, dessicated potatoes, cheese and syrup—most of it purchased for deer meat and furs from whalers and from Capt. Amundsen's exploring vessel *Gjoa*. The whole was cooked on an air pressure kerosene stove, in a tent that would be considered presentably clean for a holiday camper. In a Loucheux tent, 200 miles to the south, one feast of dark trade flour a year, tea two-thirds of the year, with deer, fish, rabbits and starvation alternating, is the typical condition. The meal described above was, it must be allowed, unusually varied in its menu, even for an Eskimo house of the best class. Its owner was not a Mackenzie native but an immigrant from near Kotzebue sound. Besides various household articles, he owned half a dozen good rifles, a whaleboat, and a quarter share in a forty ton sailing schooner. He was not a Christian, and spoke not much more than a dozen words in English.

The typical Indian likes to smoke in silence, or chat idly with his neighbours while his women folk do the work; on the contrary, an Eskimo is never idle. If he wants to go to a neighbour's house for a chat, he takes his work with him, a net to be made or mended; a gun to be cleaned; a set of dog harness to be braided or sewn. In hunting or fishing he is equally energetic and persistent; going out for game and taking fish out of a net, when an Indian under like conditions stays at home, because it is too cold to hunt. And with it all, the Eskimo is thrifty.

When an Indian goes to a trading post he takes with him all his fur, and he invariably sells it all. If the trader does not have in stock what he wants, he will buy something else, whether he wants it or not. The trading goods carried in stock by the Hudson's Bay Company for Indians show pretty well what they want; tobacco, tea, ammunition, bright cloth, ribbons, beads, sleigh bells, canned meats and fruits, candy, chewing gum, sweet biscuits, sauces, extracts, patent medicines, even English plum pudding. I have seen an Indian trade 12 fish averaging perhaps 3 pounds each, for a pound tin of canned salmon, when he had been starving the week before, and had nothing to eat the next day.

For the Eskimo, the goods on sale are in general different; tea, tobacco, ammunition, carpenter's tools, copper kettles, and first quality woollen blankets. If the trader does not have the exact article wanted he does not get the fur. I have known Eskimo to go 250 miles from Herschel island to buy at Macpherson, tea at $2 a pound because they did not like the tea they were getting from the whalers at 50 cents a pound. Often they treasure up silver fox skins for years to buy whaleboats, or small steam launches, or tug boats. The Indians whenever they can, will buy loaded cartridges, but the Eskimo always load their own, thus saving perhaps two-thirds of the price.

Although the Eskimo buy only staple goods, the traders at Macpherson and Arctic Red river, prefer to deal with them rather than with Indians; largely for the reason that an Indian always wants more than he can pay for, and then frequently defaults payment; while an Eskimo rarely even buys to the full extent of his present catch of fur, preferring to keep a few valuable skins for a rainy day.

A striking demonstration of the qualities that must keep the Eskimo comparatively well off, so long as there are even moderate resources in his country, was afforded by their manner of trading at Macpherson in the summer of 1908. Deerskins were scarce both with the Indians and Eskimo, but the Indians sold all they could muster at $2 each to the trader, who immediately resold them to Eskimo in exchange for fox, mink and marten. Of these deerskins, the Eskimo will this year make clothes to keep them warm hunting and working.

To sum up, while the condition, in general, of most Indians in the northern Mackenzie valley is wretched, in my opinion the Eskimo of the delta live at a higher average of level of material comfort than do the white men of any city with which I am familiar.

GAME IN THE MACKENZIE DELTA.

The upper part of the Mackenzie delta, towards the mouth of the Peel, is generally covered with a fairly thick forest, consisting mainly of spruce, but towards the

ocean this thins out and the more northerly islands show only Arctic willow or no tree growth at all. Even to the ocean edge, the footprints of moose and black bear are occasionally seen, but the animals are more abundant farther up the river. They are most numerous near the middle of the delta, midway between the hunting ground of the Eskimo and that of the Indians from Fort Macpherson.

In the neighbourhood of the delta, black, silver, cross, and red foxes, as well as mink and marten are found. In some years lynxes are numerous, and rabbits, here as elsewhere, vary from year to year. The Arctic hare is not ordinarily seen west of Cape Bathurst, and the musk ox in recent years is not found west of the Anderson river. Polar bears are now scarce along the coast, their decrease being due not only to the introduction of modern and highly efficient firearms among the Eskimo, but to the occasional poisoning by whalers of whale carcasses, etc. The Eskimo too, occasionally use poison, although as this is against the law, they are somewhat restrained through fear of the Mounted Police.

Last winter our household at Tuktuyaktok, near Cape Brown, secured four white bears, and some of our neighbours secured one or more. At Baillie island the animals are more numerous. East of Cape Parry, the Eskimo say that bears are so numerous that one may occasionally see from ten to twenty at one time from the top of a high hill.

FIREARMS AMONG THE ESKIMO.

In guns, as in everything else, the Eskimo are anxious to get the best. They had no firearms until long after the Indians south of them were supplied with muzzle-loaders by the Hudson's Bay Company. But when whalers began to winter at Herschel island, the Eskimo soon secured modern American rifles, and are now so particular about their quality, that 44 calibre guns and others of low power, are practically without value among them. Some own Krag-Jorgensen, Lee-Enfield, and other similar high-power rifles, and if it were not for the greater cost of the ammunition, these guns would doubtless entirely replace the American-made rifles, for the Eskimo keenly values lightness of ammunition and high power of the rifle.

ESKIMO METHODS OF DEER HUNTING.

When a herd of deer is discovered the usual mode of procedure among the Eskimo is as follows: The news is passed around to as many men as are within reach, and careful preparations are made. Perhaps the hunters will even take time to cook or eat a good meal before starting. Then begins an attempt to surround the herd, involving many hours and sometimes the larger part of a day. Commonly they succeed in surrounding the band, and I have known cases where sixteen, twenty, or even thirty deer were killed, to the last one.

CLEANLINESS.

Much has been written about the filthiness of the Eskimo, but mostly by travellers who have seen them only from the point of view of tourists living in comparative luxury in their own houses or ships. Some of them even pride themselves on a sensitiveness that prevented their entering the 'wretched hovels' of the natives. In marked contrast is the testimony of C. F. Hall, Nansen, Hanbury, and, as far as I know, of all who have lived with the Eskimo in their houses, and hence are entitled to express an opinion based on their own experience.

One element of house cleanliness is ventilation. In an Eskimo house this is provided for according to the number of inhabitants and the abundance of fuel; and the abundance of fuel must necessarily be the determining factor in any cold country, for most people prefer inadequate ventilation to freezing to death. In the Mackenzie district there is, practically speaking, only one outlet for the indoor air, viz., a chimney in the roof; for the house is otherwise approximately air-tight, and the door will let

in cold air practically no faster than the chimney lets out the warm air. When fuel is abundant, this chimney is three or four inches in diameter for a house accommodating twenty or thirty people. But when it is remembered that the fires within doors keep the temperature between 60° F. and 85° F., while the winter temperature outside ranges from −20° F. to −55° F., it will be seen that the current of warm air rushing up through the chimney will be very rapid. In fact, on the naked hand, one feels it like a blast, and the column of steam formed in contact with the outer air rises in calm weather like a pillar of smoke above the house.

The Eskimo house is generally not evil-smelling, for the six or eight seal or whale-oil lamps burn, when properly trimmed, without odour or smoke. At meal-times a mess of gamey venison or fish may be a trifle malodorous, but not more so than certain cheese that is occasionally admitted into our own dining-room.

It is true that many an Eskimo goes from year to year without a bath; but so does many a white man, and apparently with no very serious results in either case.

FOOD.

With a few unimportant exceptions, such as berries, leaves and roots, the diet of Mackenzie River Eskimo is of fish, sea mammals, land mammals and birds—named in the order of abundance and consequent importance. Fish, in summer, is eaten preferably cooked, but occasionally raw. For winter use some of it is smoke-dried, or wind dried, but not much, since the climate is damp. Most of it, however, is put in caches on the surface of the ground and covered with logs. This becomes more or less high towards winter, depending upon whether it is put up in the spring, summer, or autumn. In winter, fresh fish only is cooked, and that not always; while the rotten fish is always eaten raw and usually frozen. Of the total amount of fish eaten, perhaps three-quarters is eaten raw. The blubber of seals and white whales (beluga) is usually put up in sealskin bags, but occasionally, if very abundant, white whale blubber is cached in the ground, like fish. Seal meat is similarly cached for winter use, and white whale meat is also cached, or else dried. The bowhead whale, which formerly was frequently killed, has now been driven out of the land waters by the American whaling ships, though an occasional carcase drifts ashore, and in early autumn is cut up in blocks and piled like cordwood for winter use.

Meat in general, except the skin of the bowhead, is eaten cooked, if the means for cooking are at hand. Bear meat I have never seen eaten raw under any circumstances. Deer, if killed in summer and not immediately needed, are ground-cached, or dragged, with the skin on, into a pond; but if killed in winter they are placed on elevated platforms near the house. Birds and eggs are usually eaten immediately after they are secured, and usually boiled. Eggs are eaten at any stage of incubation.

It may be worth recording, that after trying the Eskimo diet for several consecutive months, during a time when we had no civilized food whatever to vary it with, I fully agree with the Eskimo taste in the matter of preparing it. During some two or three months of fish diet, unvaried by meat, I found it most agreeable to eat two or more meals a day of raw fish and one of cooked. And when it is raw, I prefer, as do the Eskimo, high fish to fresh.

The foregoing outline of the Eskimo diet is more true for the past than the present, for in ordinary years they now have various articles of civilized diet, even east of the Mackenzie, where the whaler's influence is least. But during the winter of 1906-7, for the first time since 1889, there was no whaling vessel in the Beaufort sea from which supplies could be bought for use in the winter. In my case, that was a fortunate circumstance, since it threw the natives upon their own resources and into their old ways of food-getting and food-preparing. This summer (1908) no ships' goods have been secured, hence everyone is again on a fish diet, though vessels are expected to come in from the west in August.

CLOTHING.

For summer wear, the Mackenzie Eskimo now prefer cotton and woollen clothing, but formerly they wore sealskins, or any old, nearly outworn clothes left over from the previous winter. For coat and trousers, the sealskin is tanned with the hair on, but for water-proof boots, knee or high boots, the hair is removed. These boots, with legs of common seal and soles of ground seal or white whale skin, last for three or four months and are perfectly water-tight, while they weigh not one-fourth as much as rubber boots.

In winter the clothing is usually deerskin, though muskrat or other small fur is occasionally used for underwear, and bird or even fish skins will tide over a bad season. The typical suit is made up as follows: undershirt, with hood and knee-drawers of young, summer-killed deer, with the hair turned towards the body; coat with hood, and knee trousers of older, summer-killed deer, with the hair turned out. Socks of deerskin with hair inwards; boots with deerskin legs and soles of long-haired deer, the boot leg with hair outside, the sole with hair inside. Two pair of deerskin mittens, the inner with hair inside, the outer with hair outside, and either or both with gauntlets. This suit is so warm that it may be considered cold-proof, and when well made, weighs ten to twelve pounds. Eskimo garments are two and a half to four times as light, a great deal more pliable, and much warmer than European garments, no matter what their weight. Eskimo clothing has, therefore, been adopted *in toto* by Peary, Amundsen and others, even to the exclusion of woollen or silk underwear and socks.

The warmth of an Eskimo suit is clearly indicated by the procedure of the natives when caught in a blizzard away from their houses and under conditions prohibiting the building of a snow house. They then make no attempt to reach their homes, since they would probably become tired and wet with perspiration without gaining any advantage; instead they take off their mittens, place them on the ground, kneel on them, and slip their arms out of the coat and shirt sleeves, that they may fold them on their bare breast. In this way, squatting on their haunches in some elevated spot where no snowdrift will collect, they sit for one, two, or even three days, awaiting the cessation of the storm; complaining of hunger only when the weather finally clears and they can get home.

SUMMER TRAVEL.

The Mackenzie Eskimo, like most primitive races, generally confine their summer movements to the water routes, and utilize the one-man kayak and the open, capacious umiak. One essential difference in their use of these, from that of the Eskimo farther east, is that the umiak is not so strictly a woman's boat as in Greenland, where it is said to be an ineffaceable disgrace to a man, unless decrepit with age, to travel in the umiak. In the delta, however, although all the women travel in the umiaks, so do some of the men, and without dishonour.

When possible, the Mackenzie kayak is constructed of the skin of the ordinary hair seal, while the umiak is preferably of white whale, but occasionally of ground-seal skin. The umiaks are made of from five to nine or ten seal, or beluga skins, and carry one to four tons of freight. They are a fairly seaworthy boat when equipped with seal-skin floats along the gunwales to act as an outrigger. They are easily paddled in smooth water, but are too light to make headway against a stiff breeze. This quality of lightness makes them easily portaged and hauled ashore. Their chief disadvantage is that they must be hauled ashore every three or four days and dried, to prevent rotting.

In summer the people travel light, leaving most of their belongings in caches, unless they intend moving to an entirely different section of the coast.

WINTER TRAVEL.

Winter travel is by means of dog sleds. The Mackenzie sled is from 3½ to 4 feet wide, with solid runners about 4 feet long and 1½″ to 2″ wide. These runners are commonly shod with ice, though whalebone is used if it is intended to draw them over bare spots. The ice shoeing is made by stirring dry snow and chopped moss together, then mixing in water enough to make a sort of slush. These runners glide with greater ease than those made of any metal, and need looking after only on starting each morning, providing one does not cross bare ground or glare ice.

The Mackenzie dog team, as I have seen it, varies from one to eleven dogs. They are not hitched by single traces, as by the eastern Eskimo; nor tandem, as is the Indian custom; but on short branch traces, joined to a main one that runs direct from the sled to the leading dog. This system may be said to combine most of the advantages of other systems, for it allows the dogs to pull straight, one behind the other as when hitched tandem; while it also allows almost as much individual freedom among rough ice as does the Greenland system, but without the corresponding danger of dogs going either side of a snag and forking the traces.

The Eskimo's object in winter travel is not speed, but comfort. He, therefore, takes along most of his belongings. This makes his sled heavy. A moving family in winter will not average more than 8 to 12 miles per day.

In spring and autumn, when the weather is not very cold, the Eskimo ordinarily sleep in tents, but in mid-winter they prefer snow houses. One large enough to accommodate a family can ordinarily be built by two men in an hour. When once built, it will stand a blizzard that would blow away almost any tent, and can be kept warm by one or two blubber lamps. As a matter of personal testimony, I may say that I much prefer a fairly good snow house to the most elaborately designed tent. I have never seen water freeze over night, and one can keep his foot-gear and bedding dry in a snow-house, but I think cannot do so in a tent that has no stove or fire. Peary, Hanbury, and all the white men I know of, who have tried both snow-houses and tents in the Arctic mid-winter, much prefer the snow-house.

Camping in snow-houses and travelling slowly, the Eskimo with their families keep moving during seasons which keep the ordinary explorer indoors, excepting the few who have adopted Eskimo methods and clothing.

MARRIAGE AND MARRIAGE CUSTOMS.

There are literally no ceremonies connected with marriage among the delta Eskimo. The mutual desire of the two parties to the arrangement is sufficient, though it is customary to secure the formal consent of the bride's parents. The young man makes the advances, asking first the father, then the mother, then the girl. If all parties are pleased with the marriage, the young couple usually live with the bride's parents, if she is an only daughter or the last one married, but if there are unmarried, grown sisters, the couple will live with the groom's parents if desired, or else put up their own house.

Divorce is equally simple. Either one may leave the other without an explanation to anyone. Doubtless the person thus left is often ill-pleased, but it seems to be a matter of etiquette not to show it. Out of a good many divorces, I have not seen a case where either party showed grief, or a feeling of injury.

In divorce, no blame or disgrace usually attaches to either party. I have known only one case that caused unfavourable comment, so much indeed, that the man feared for his life. The matter was this, that when his wife told him she wanted to cease living with him, the husband told her that she would have to go away without dogs as he wanted to use his team on a trip in the opposite direction to that in which she wished to go. Accordingly she struck off alone, got her feet wet, and froze her toes badly before reaching a house. People said that the husband should either have taken her where she wanted to go, or have lent her the dog team.

BURIAL CUSTOMS.

The Mackenzie River Eskimo put the body of the dead person on the ground, sometimes on hills, but more frequently on sand spits where driftwood is abundant. The body is then covered with logs, the sled on which it was hauled to the burial place is broken up by the side of the grave, and a number of articles that the dead man had used, or owned, are left beside him. A few articles of great value, such as labrets of rare stone, ordinarily pass to the descendants of the dead man. If, however, the man had owned several pairs, one or more may be buried with him. A woman's most valuable possession, her false hair, is, however, usually buried with its owner. This accounts partly for the fabulous price at which false hair is held, for the value of a good set is computed at from one to two white whale skin umiaks.

Whalers assert that very often now-a-days, an old, inferior gun is substituted for the better weapon owned by the dead man. This, however, the Eskimo deny, and I am uncertain where the truth lies. They admit that the custom is growing into disuse, and at certain recent burials no property at all was left beside the grave. In general, the Eskimo seem to have the idea that the articles left with the body are useful to the dead. Sometimes, however, these take a curious form. For instance, one man told me that as he could not bury both a blanket and a rifle with the deceased relative, he buried two blankets and no rifle. He said that the dead man could use one of the blankets as a rifle in the future life. As I met this Eskimo at a time when my command of the language was as yet very limited, I could not make out clearly whether he expected his relative to trade off one of the blankets in the future life for a rifle, or whether he thought of the blankets merely as an indefinite equivalent for the gun.

Food is often placed in the grave with the dead, and it was formerly a custom to occasionally replenish this store for two or three years after the individual's death. Only small quantities were put on the grave, however, a year's supply of food for the dead man rarely being equal to a square meal for the living. Sometimes articles placed on the grave were deliberately broken and the food occasionally burned, or otherwise handled so as to be unfit for the use of the living. From my investigation of the older graves I concluded that such articles as kayaks and sleds were almost invariably broken; while smaller things were buried in good condition. All the Eskimo agree that the labrets were not left in the man's lips, but were placed at the side of his head in the grave. Some say invariably at the right side of the head.

Eskimo from Point Barrow, and along the north coast of Alaska, told me that the only proper way to bury a man was with his head to the east, but the excavation of graves showed, as a matter of fact, no such uniformity. It was difficult, in some cases, to determine the original position of the body, because the graves had been disturbed by dogs, wolves, or polar bears. In fact, the body is ordinarily devoured within a day or a week of its interment. It is said that if the dead had been recognized by the community as a man of importance, more pains were taken to preserve his body, and the Eskimo frequently remark, on seeing a carefully covered grave, 'a good man must be buried there.'

DISTRIBUTION BRANCH.

During the twelve months from December 1, 1907, there were distributed 112,816 publications, comprising reports, parts of reports, bulletins and maps; of these 76,544 were distributed in Canada, 22,370 in the United States, 10,468 in England, and 3,434 in foreign countries.

The sale of publications during the year, including maps and reports, amounted to $354.

The number of letters received in connexion with the distribution of maps and reports was 3,928, besides 12,000 acknowledgments from exchanges and individuals.

The number of letters sent out was 3,502.

THE LIBRARY.

Publications to the number of 3,275 were received as donations or exchange, including besides periodicals, maps, reports and publications of foreign Geological Surveys, memoirs, transactions and proceedings of societies of both Europe and America. The number of volumes purchased was 138, while 230 volumes were bound.

The number of letters sent out relating to library work was 289, besides 656 acknowledgments for publications received.

There are now in the library 16,650 volumes, besides a large number of pamphlets on various subjects. The library is open from 10 a.m. to 4 p.m. for persons wishing to obtain information in regard to scientific matters.

PUBLICATIONS.

The following reports and catalogues have been published since January 1, 1908:—

No.

947. Summary Report, 1905. *French translation.*

959. Summary Report, 1906. *French translation.*

961. Reprint Part H., Vol. XIV., Report on the Nickel Deposits of Sudbury, Ont. By Dr. A. E. Barlow. Published November 10, 1908.

962. Reprint, Part I., Vol. X., Report on the Geology and Natural Resources of the area included by the Nipissing and Timiskaming map sheets. By Dr. A. E. Barlow. Published November 10, 1908.

965. Report on the Nickel Deposits of Sudbury, Ont. By Dr. A. E. Barlow. *French translation.* Published August 13, 1908.

968. Report on the Moose Mountain area. By D. D. Cairnes. Published January 1, 1908.

970. Report on Niagara Falls. By Dr. J. W. Spencer. Published January 15, 1908.

972. Descriptive Catalogue of Minerals and Rocks. By R. A. A. Johnston and G. A. Young. Published February 28, 1908.

974. Report on the Copper Deposits of the Eastern Townships of Quebec. By J. A. Dresser. English edition. Published April 7, 1908.

975. Report on the Copper Deposits of the Eastern Townships of Quebec. By J. A. Dresser. *French translation.* Published April 7, 1908.

982. Report on the Conrad district, Yukon. By D. D. Cairnes. Published July 28, 1908.

983. Report on the Geology and Mineral Resources of New Brunswick. By R. W. Ells. Published December 10, 1908.

984. Report on the Mineral Pigments of Canada. By C. W. Willimott. *French translation.* Published February 15, 1908.

986. Report on the Similkameen district. By C. Camsell. Published September 20, 1908.

988. Report on the Telkwa valley, B.C. By W. W. Leach. Published May 22, 1908.

992. Report on a portion of North-western Ontario traversed by the National Transcontinental railway between Lake Nipigon and Sturgeon lake. By W. H. Collins. Published April 30, 1908.

996. Report on the Nanaimo and New Westminster districts. By O. E. LeRoy. Published June 19, 1908.

998. Report on the Pembroke sheet. By R. W. Ells. *French translation.* Published January 1, 1908.

1000. General Index. By F. J. Nicolas. Published May 1, 1908.

1013. Report on the Tertiary Fossil plants of British Columbia. By Prof. D. P. Penhallow. Published June 8, 1908.

1016. Report on gold values in the Klondike High Level Gravels. By R. G. McConnell. *French translation.*

1017. Summary Report for 1907. Published January 13, 1908. Second Edition published December 26, 1908.

1021. Report on Explorations in Nova Scotia (Summary Report.) By Hugh Fletcher. Published July 3, 1908.

1028. Report on a Recent Discovery of Gold near Lake Megantic, Que. By J. A. Dresser. English Edition. Published July 17, 1908.

1030. Report on the Landslide at Notre-Dame de la Salette, Lièvre river, Quebec. By R. W. Ells. English Edition. Published July 17, 1908.

1031. Report on the Landslide at Notre-Dame de la Salette. Lièvre river, Quebec. By R. W. Ells. *French translation.* Published August 1, 1908.

1032. Report on a Recent Discovery of Gold near Lake Megantic, Que. By J. A. Dresser. *French translation.* Published August 1, 1908.

SPECIAL REPRINTS.

Report on the new Crocodilian Genus and Species from the Judith River Formation of Alberta. By L. M. Lambe. Trans. Royal Society Canada, Vol. I., Section 4.

SESSIONAL PAPER No. 26

Report on a collection of Fossil Woods from the Cretaceous of Alberta. By D. P. Penhallow.

Report of Bibliography of Canadian Zoology for 1907, exclusive of Entomology. Trans. Royal Society of Canada, Vol. 2, Section 4.

FRENCH TRANSLATION SECTION.

(M. Sauvalle.)

The following work has been executed during the year. Translating and editing the following reports:—

No.

829. Annual Report (New Series) Vol. XII, 1899.

1031. Report on the Landslide at Notre-Dame de la Salette. By R. W. Ells.

1032. Report on a Recent Discovery of Gold near Lake Megantic, Que. By John A. Dresser.

1034. Report on Mineral Resources of New Brunswick. By R. W. Ells.

1038. Report on a portion of North-western Ontario traversed by the National Transcontinental railway. By W. H. Collins.

1052. Report on Wells of Island of Montreal. By F. D. Adams and O. E. LeRoy.

1069. Report on an Exploration of the East Coast of Hudson bay. By A. P. Low.

1070. Report on the Geology of the Basin of Nottaway river. By R. Bell.

MAPPING AND ENGRAVING.

(C. Omer Senécal.)

The following is a report of the work carried out under my supervision since December 1, 1907:—

STAFF.

The number of assistants in the mapping division has remained stationary during the past year, while the work is ever on the increase. Demands for maps of newly opened mining or prospecting areas, requiring to be promptly issued to the public, are met only with extreme difficulty and at the cost of other important work which is thereby delayed for lack of sufficient assistance and accommodation in the office; while the routine work has to be carried out.

Photographic appliances were a few years ago installed in the office for mapping purposes, but have not, so far, been fully taken advantage of, for want of a qualified assistant to operate them.

The staff of this division of the Geological Survey is at present composed of the Geographer and Chief Draughtsman, eight draughtsmen, and a typist who is also keeper of records.. These assistants have been painstaking in their work, and have generally rendered excellent service. In two cases, however, the help rendered was of little value; owing to the meagre and irregular attendance at the office, due to sick leave, or otherwise.

To cope with the increasing work which devolves on this office, especially during the autumn and winter months, and in view of the fact that, revised editions of a large number of indispensable geological maps, the stock of which is now exhausted, demand the earliest attention, two or three first-class map compilers and letterers, at least, and a photographer accustomed to line work, are required.

ROUTINE OFFICE WORK.

The routine work of this office, which includes the plotting of geographical projections; computation of astronomical observations; correction and revision of map proofs; making photographic negatives and prints; tracings of all descriptions for office and field use; supplying information to the librarian and others; writing memoranda referring to the reproduction of maps, and on other subjects relating to map-work, was distributed among the staff, and attended to.

ASSIGNMENT OF WORK.

The principal work of the office was assigned as follows:—

Mr. L. N. Richard compiled a large map of the upper Lake Timiskaming district extending in Ontario and Quebec, on the scale of 1 mile to 1 inch, and partly traced the same for engraving. The colour copies and revision of the proofs of the new edition of the Lake Nipissing and Timiskaming sheets were also entrusted to him. Mr. Richard is at present engaged on the examination and testing of field instruments, and preparing lists of repairs.

Mr. A. Dickison traced for engraving and prepared the colour copies of the several maps of the Rossland mining district, B.C., which are now in the engravers' hands. He also drew a number of illustrations for a report on that district. On

August 14, Mr. Dickison received instructions to proceed to Phœnix, B.C., and there to report himself to Mr. W. H. Boyd, and assist him in his mapping of this mining centre. He returned on October 21, and resumed the compilation of a map of the upper Winisk River region, which he had begun last year.

Mr. H. Lefebvre compiled a map of part of north-western Ontario, showing the country traversed by the National Transcontinental railway between Lac Seul and Lake of the Woods, on the scale of 4 miles to 1 inch, and traced and lettered the same for engraving. He compiled additional surveys on the preliminary map of Telkwa River valley, B.C., and constructed several map projections.

Mr. O. E. Prud'homme drew a series of nine maps of portions of Whitehorse Copper Belt, Yukon Territory, on various scales, for engraving and photolithographing; prepared the colour work on sheet 2 of the map of Lièvre River valley, Quebec, and a map of the vicinity of Lake Megantic, Quebec, for printing. He also made sundry reductions of surveys for maps under construction, zinc cut illustrations, and drawings of a few fossils for reports.

Mr. G. Aitken drew for photolithography, a map of eastern Ontario, to illustrate a report on raised ancient shore-lines (publication deferred). He traced for engraving, and prepared colour copy of a preliminary map of lower Lake Laberge and vicinity, Yukon; traced for engraving, sheets Nos. 11 and 17, north-west Ontario (Lake Nipigon); and compiled a map of the Chromite and Asbestos mining areas near Thetford mines, Quebec. The engraver's tracing of this sheet is nearly finished.

Mr. R. B. Yorston traced for engraving and prepared colour copies of several Nova Scotia serial geological sheets, namely: Halifax sheet No. 68; Waverley sheet, No. 67; Aspotogan sheet, No. 70; St. Margaret Bay sheet, No. 71, and Windsor sheet, No. 73. He assisted Mr. E. R. Faribault generally on Nova Scotia mapping. He is, at present, preparing a map of the routes between Lac Seul and Cat lake, North West Territories (Keewatin).

Mr. F. O'Farrell was again attached to this division on July 6. He has in hand a general index map of the Dominion, showing all the maps published by the Geological Survey to date.

Mr. J. F. E. Johnston is making reductions of railway plans for intended maps of British Columbia. He traced a number of boundary plans for records, made lists of repairs of instruments, etc.

Mr. J. J. McGee, Jr., kept the record of the stock of plans and maps belonging to the Geological Survey; attended to typewriting and to general office work. A catalogue of a large number of railway plans, hitherto not listed, is being prepared by him.

MAP WORK BY FIELD OFFICERS.

The following maps are also under construction by field officers from their respective surveys:—

Exploration of Pelly, Ross and Gravel rivers; Yukon, and North West Territories, scale 8 miles to 1 inch, by Mr. J. Keele.

Whitehorse Copper Belt, Yukon Territory, general map, scale 40 chains to 1 inch, and central portion of same, scale 400 feet to 1 inch, by Mr. F. H. MacLaren.

Coal areas between Tantalus and Whitehorse, Yukon Territory, scale 1 mile to 1 inch, by Mr. H. Matheson.

Big Horn coal basin, Alberta, scale 1 mile to 1 inch, by Mr. G. S. Malloch.

Canoe route between The Pas and Split lake, Saskatchewan and North West Territories, scale 8 miles to 1 inch, by Mr. Wm. McInnes.

Tract of land in Abitibi district, Quebec, traversed by the National Transcontinental railway, scale 4 miles to 1 inch, by Mr. W. J. Wilson.

Lake Simcoe topographical and geological sheet, scale 2 miles to 1 inch, by Mr. W. A. Johnston.

City of St. John and vicinity, N.B., by Mr. J. A. Robert.

Bathurst and vicinity, N.B., by Mr. G. A. Young.

Albert county, etc., N.B., by Mr. S. Ells.

Final revision of Gaspereau sheet, No. 85, New Ross sheet, No. 86, and Mahone Bay sheet, No. 88, Nova Scotia series, by Mr. E. R. Faribault.

The eastern sheet of the Dominion geological map, on the scale of 50 miles to 1 inch, and the Ontario serial sheets, Nos. 111 and 112, Kingston district, scale 4 miles to 1 inch, are in the hands of the geographer of the Department of the Interior.

INSTRUMENTS.

A large number of new instruments were purchased and, where necessary, old instruments were, as usual, overhauled and repaired.

GEOGRAPHIC BOARD.

The meetings of the Geographic Board of Canada were regularly attended, and place names given on our maps submitted for approval. Lists of approved names are published in the Annual Report of the Board, and from time to time, in the *Canada Gazette*.

CORRESPONDENCE.

Some 380 letters, memoranda, specification sheets, etc., relating to the work of this office were sent out; while 450 were received.

MAP EDITIONS PUBLISHED.

There are, at present, seventeen maps in the hands of the King's Printer, several of which will be issued shortly. A list of the editions received during the period covered by this report, is appended herewith.

Catalogue Number.	Title.	Approximate area in sq. miles.
1042	Dominion of Canada—Minerals—Scale 100 miles to 1 inch.	
1011	Yukon Territory—Auriferous gravels on Bonanza and Hunker creeks, Klondike Mining district—Scale 40 chains to 1 inch.	
991	Yukon Territory—Sketch geological map of vicinity of Tantalus and Five Fingers coal mines—Scale 1 mile to 1 inch. . . .	60
990	Yukon Territory—Geological and topographical map of portion of Conrad and Whitehorse Mining districts—Scale 2 miles to 1 inch.	400
1033	Yukon Territory—Preliminary geological and topographical map of Lower Lake Laberge and vicinity—Scale 1 mile to 1 inch.	240
1001	British Columbia—Special map of Rossland, topographical sheet—Scale 400 feet to 1 inch.	1·9
1003	British Columbia—Rossland Mining camp, topographical sheet—Scale 1,200 feet to 1 inch.	7·2
997	British Columbia—Geological map of part of Nanaimo and New Westminster Mining divisions—Scale 4 miles to 1 inch.	500
989	British Columbia—Sketch geological map of Telkwa river and vicinity, Omineca Mining district—Scale 2 miles to 1 inch.	400

987	British Columbia—Geological and topographical map of Princeton and Copper Mountain Mining camp, Yale district—Scale 40 chains to 1 inch..	110
791	British Columbia—West Kootenay sheet. Economic minerals and glacial striae, second edition—Scale 4 miles to 1 inch.	6,000
1009	North West Territories—Geological map of canoe route between Split Lake and Fort Churchill—Scale 16 miles to 1 inch.	
1010	Alberta, Saskatchewan and Manitoba—Coal areas—Scale 35 miles to 1 inch.	
993	North-western Ontario—Geological map of country traversed by the National Transcontinental railway, between Lake Nipigon and Sturgeon lake—Scale 4 miles to 1 inch..	1,300
599	Ontario and Quebec—Lake Timiskaming geological sheet, No. 138, second edition, revised to date—Scale 4 miles to 1 inch.	3,456
606	Ontario and Quebec—Lake Nipissing geological sheet, No. 131, second edition, revised to date—Scale 4 miles to 1 inch.. ..	3,456
1029	Quebec—Geological map of Lake Megantic and vicinity, Compton county—Scale 2 miles to 1 inch..	200
1005	Nova Scotia—Elmsdale geological sheet, No. 66, Halifax and Lunenburg counties—Scale 1 mile to 1 inch..	216
1036	Nova Scotia—St. Margaret Bay geological sheet, No. 71, Halifax and Lunenburg counties—Scale 1 mile to 1 inch..	180
1043	Nova Scotia—Aspotogan geological sheet, No. 70, Halifax and Lunenburg counties—Scale 1 mile to 1 inch..	70
1012	Nova Scotia—Plan and sections of Brookfield Gold district—Scale 250 feet to 1 inch.	

ACCOUNTANT'S STATEMENT.

The staff of the Geological Survey Branch at present employed numbers sixty-six.

During the year the following changes have taken place in the staff:—

Death—

Dr. Robert Chalmers.

Superannuations—

Dr. Robert Bell.
Mr. C. W. Willimott.

Appointments—

Mr. R. W. Brock, Director.
Mr. O. E. LeRoy, a technical officer.
Mr. Alex. Young, a junior second-class clerk.

Promotions—

Mr. W. H. Boyd, a technical officer, vice Dr. Robt. Chalmers, deceased.

The funds available for the work and expenditure of the Geological Survey Branch for the fiscal year ended March 31, 1908, were:—

Details—	Grant.	Expenditure.
Civil list appropriation	$ 75,525 00	
General appropriations	152,050 00	
Civil list salaries	.....	$ 70,558 01
Explorations and surveys	.....	46,733 62
Experimental borings for gas, oil, etc	.....	6,730 45
Experimental coal tests	.....	17,455 93
Wages of temporary employes	.....	39,020 02
Printing, engraving and lithographing	.....	23,834 03
Books and instruments	.....	2,965 04
Chemicals and apparatus	.....	570 81
Specimens for Museum	.....	3,552 81
Stationery, mapping materials, etc	.....	2,834 49
Ottawa Exhibition, 1907	.....	110 00
Incidental and other expenses	.....	3,578 54
Advanced to field explorers in 1907-8, to be accounted for 1908-9	.....	1,067 35
Unexpended balance civil list appropriation	.....	4,966 99
Unexpended balances general appropriations	.....	3,596 91
	$227,575 00	$227,575 00

JOHN MARSHALL,
Accountant, Dept. of Mines.

GENERAL CONCLUSION.

In concluding this annual Summary Report it may be restated that, the publication of the *English* editions of Geological Survey reports in the form of annual volumes was discontinued with the issue of Vol. XVI., and the *French* with Vol. XII. In place thereof the individual reports are now published separately in pamphlet form and thus get into the hands of the interested public much earlier than was possible under the annual volume system. Moreover, the fact may be recalled that, on pages 204, 205, 208 and 209, are lists of the reports and maps issued during the past year; and it is an opportune time to announce that, a revised Catalogue of Geological Survey reports and maps—1843 to 1909—is now in the press. Applications for the publications of the Geological Survey—addressed to the Director—will be promptly attended to.

I have the honour to be, Sir,
Your obedient servant,

(Signed) R. W. BROCK,
Director.

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SUMMARY REPORT

OF THE

MINES BRANCH

OF THE

DEPARTMENT OF MINES

FOR THE NINE MONTHS ENDING DECEMBER 31

1908

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1909

To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, Viscount Howick, Baron Grey of Howick, a Baronet, G.C.M.G., &c., &c., &c., Governor General of Canada.

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned has the honour to lay before Your Excellency, in compliance with 6-7 Edward VII., Chapter 29, section 18, the Summary Report of the work done by the Mines Branch during the nine months ending December 31, 1908.

(Signed) W. TEMPLEMAN,

Minister of Mines.

Hon. Wm. Templeman,

Minister of Mines,

Ottawa.

Sir,—I have the honour to submit herewith, the Director's Summary Report of the work done by the Mines Branch during the nine months ending December 31, 1908.

I am, sir, your obedient servant,

(Signed) A. P. LOW,

Deputy Minister.

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SUMMARY REPORT

OF THE

MINES BRANCH OF THE DEPARTMENT OF MINES

FOR THE NINE MONTHS ENDING DECEMBER 31, 1908

A. P. Low, Esq., LL.D.,
Deputy Minister,
Department of Mines.

SIR,—I have the honour to submit, herewith, the Summary Report of the Mines Branch of the Department of Mines for the nine months ending December 31, 1908.

CHANGE FROM FISCAL TO CALENDAR YEAR.

My report for 1907-8, consisted of a statement of the general work of the Mines Branch for the fiscal year ending March 31, 1908; the main reason for the innovation being, the delay in getting all the facts relating to the assay office, Vancouver, B.C.; the business operations of which are necessarily regulated in accordance with the fiscal year. It has been deemed advisable, however, to issue all future reports at the end of the calendar year, so that the summary reports of both branches, viz., Mines Branch, and Geological Survey Branch, may be issued simultaneously, and under one cover as a combined report of the entire Department. This latter plan seems to me both logical and practical, and its adoption would doubtless evoke greater interest in the general work of the Department of Mines.

ORGANIZATION.

During the year the following appointments were made to the permanent staff of the Mines Branch:—

William W. Leach—Technical officer.
Benjamin F. Haanel—Technical officer.
Einar Lindeman—Technical officer.
Harold A. Leverin—Technical officer.
John McLeish—First-class clerk.
Miss Jessie Orme—Junior second-class clerk.
Miss Grace McGregor—Third-class clerk.

The work of editing, proof-reading, and publishing the increasing number of Mines Branch reports, etc., having, hitherto, been done by various members of the

technical staff, a condition of things which was found to seriously interfere with regular field work in summer and the concentrated study of important technical subjects during the indoor months; it was decided to appoint a permanent editor. Mr. S. Groves commenced his duties as editor of the Mines Branch on March 23, 1908. Shortly after this date, however, the duties of the editor were enlarged. By Order in Council—May 14, 1908—Mr. Groves was appointed editor of the entire Department of Mines: his new duties being to edit all the publications of both the Mines Branch and the Geological Survey Branch. This establishment of a departmental editorial office, involving, as it did, considerable extra labour, necessitated additional help, hence on June 23, 1908—by Order in Council—Mr. J. J. Bell was appointed assistant editor.

MINING AND METALLURGICAL INDUSTRIES OF CANADA.

In 1907, the following special staff was appointed to gather material for a comprehensive, practical report on the mining and metallurgical industries of Canada:—

D. D. Cairnes—Yukon Territory.
R. R. Hedley—British Columbia, Alberta, Saskatchewan and Manitoba.
Fritz Cirkel and J. J. Bell—Ontario.
J. W. Bell—Quebec.
W. F. Jennison—Nova Scotia and New Brunswick.

When this enterprise was first planned, the magnitude of the work involved was not fully realized, consequently it was not until December, 1908, that copies of the report were available for distribution.

That this report with its 936 pages of text, 144 illustrations, and seven mineral maps of the respective provinces has met a long felt want, is manifest from the comparatively large number already issued and the daily increasing demand.

Although the volume is sold at a nominal price of $1—to cover cost of mailing, and to ensure it getting into the hands of genuinely interested parties—the circulation has evidently not been retarded thereby; for most of the requisitions made are accompanied either by cheque or money order. This timely work cannot fail to attract the attention of capitalists and prospective investors in Canada and abroad to the vast mineral resources of the Dominion.

In order to render the Report on the Mining and Metallurgical Industries of Canada of permanent value, it will be necessary to keep it up-to-date. This can be done by means of supplementary sheets until such time as the publication of a new and entirely revised edition of the whole report is warranted. To accomplish this, however, the office staff of the statistical section will necessarily have to be enlarged.

INVESTIGATION OF ELECTRIC HIGH-FURNACE, SWEDEN.

In consideration of the great importance which an economical process for the reduction of the Canadian iron ores, adjacent to water powers, but too distant from cheap metallurgical fuel, would be, I was instructed on November 23, 1908, to proceed to Sweden; for the purpose of investigating and reporting upon the operation of the new electric high-furnace recently erected at Domnarfvet.

The electro-metallurgy of the reduction of iron ores by the electro-thermic process having been established by the experiments made at Sault Ste. Marie, March 3, 1906,[1] the inventors of the Swedish furnace confined their efforts to the solution of the problem of constructing a commercial furnace along the lines suggested in the above report (p. 92). The furnace inspected is the result of over two years experimentation: during which period seven furnaces differing in design were erected and tried; each embodying all the good points and corrected faults of the previously tested furnaces.

When the inventors were convinced that they had at last succeeded in constructing a satisfactory commercial furnace, they tendered me an invitation to witness an experimental run, to take place early in December, 1908.

On receiving my instructions, therefore, I immediately made the necessary preparations, and sailed for Sweden via New York on November 25, 1908. Just as the steamer was about to start I received a cablegram from Sweden announcing the impossibility of running the furnace, on account of low water in the adjacent river. It was then too late, however, to cancel my passage, hence I decided to continue my journey, and obtain as much information as possible concerning the furnace.

Immediately on my arrival in Stockholm, where I met Mr. A. Grönwall—one of the inventors of the furnace—it was arranged that we should go to Falun for the purpose of impressing upon Mr. Ljungberg, the General Director of Stora Kopparbergs Bergslags Aktiebolag—at whose works the experimental furnace was erected—the importance to Sweden, as well as to other countries, of making, if possible, the contemplated special trials. As a result of this conference, he very kindly allowed the use of power to operate the furnace for twelve days. This concession, which entailed some inconvenience to the operations of the steel plant, shows the great importance attached to the solution of this problem by men competent to judge.

Although it was originally intended to make a continuous run of several weeks' duration, this comparatively short run was sufficiently long to demonstrate the commercial applicability of the furnace, and to point out some minor details in which improvements might be made.

DESCRIPTION OF THE ELECTRIC HIGH-FURNACE.

In general appearance, this electric furnace is unlike any hitherto constructed; being very similar in general design to an ordinary blast furnace. In fact, it might be described, without much exaggeration, as a blast furnace, in which the tuyères are replaced by electrodes.

The height of the furnace above ground level is about 25 feet. The melting chamber containing the electrodes is about 7 feet high, and is of greater diameter than any other part. The shaft is about 18 feet high; and immediately above the melting chamber—for a height of about 4 feet—has the form of an inverted truncated cone; but above this point assumes the usual form of the blast furnace. The lower portion of the shaft was given the form of an inverted truncated cone for the purpose of directing the charge into the melting chamber in such a manner that the electrodes, lining, and charge could not come in contact. It is this isolation of the charge from

[1] See Report (No. 16) on the experiments made at Sault Ste. Marie, Ont., under government auspices, in the smelting of Canadian iron ore by the Electro-thermic Process, 1907: p. 92.

the lining by a free space where the electrode enters the furnace, which constitutes the particular value of the construction in preventing the destruction of the lining, which occurred in all previous furnaces where the electrode came in contact with the charge and the lining.

ELECTRODES.

A three-phase current is supplied to three electrodes which penetrate through the roof into the melting chamber, and are inclined at a definite angle towards the centre of the furnace. The direction of the electrodes is fixed by means of guides on which they slide.

In this furnace three electrodes and a three-phase current are used, but it is the intention of the inventors, in designing furnaces of larger capacity, to employ four or more electrodes, with a two-phase current.

To prevent the roof of the melting chamber near the electrodes from becoming too hot, a system of cooling tuyères is arranged: whereby the gases generated in the reduction of the iron ore are drawn from the top of the furnace, and forced, by means of an electrically driven fan, against the lining of the roof of the melting chamber. In addition to this the circulation of the gases will not only permit of a more effective utilization of the reducing power of the CO, but produce a better distribution of heat throughout the charge in the shaft above than in any electric furnace previously tried.

The electrodes are cooled by means of cast-iron stuffing boxes built in the roof of the melting chamber, and through which cold water is continually flowing.

To protect those parts of the electrodes outside of the furnace from the oxidizing influence of the air a suitable covering is provided.

REGULATION OF ELECTRODES.

Regulation of the electrodes, when necessary, is accomplished by means of three hand wheels: which operate drums on which the cables secured to the tops of the electrodes are attached. During the run, however, it was observed that no regulation of the electrodes was necessary for five consecutive days; thus eliminating the necessity for automatic regulators, or for hand regulation.

In my report on the experiments made at Sault Ste. Marie, Ont.,[1] I cited important particulars in which the construction of the electric furnace would have to be modified, in order to make it commercial, viz.:—

(1) The top of the furnace requires to be modified to permit of the application of labour-saving machinery for charging.

(2) Provision requires to be made for the collection and utilization of the carbon-monoxide produced by the reduction of the ore. This involves also the protection of the charcoal of the charge from combustion on top of the furnace.

(3) The regulation of the electrodes should be effected automatically.

[1] See Report (No. 16) on the experiments made at Sault Ste. Marie, Ont., under government auspices, in the smelting of Canadian ores by the Electro-thermic Process, 1907; p. 92.

(4) The shaft containing the charge should be sufficiently high to permit the heated CO to effect maximum reduction of ore, and the electrode should not be immersed in this shaft but contained in a side chamber supplied with the charge from the main shaft."

From a perusal of the above particulars, and a study of the foregoing description of the Electric High-furnace, it will readily be perceived that, all the modifications suggested in the report on the electric smelting experiments at Sault Ste. Marie, have been practically adopted by the inventors of this new furnace.

OPERATION OF THE FURNACE.

The experimental run was conducted under very unfavourable conditions. The brick work was new and damp, and the process of drying and heating had, of necessity, to be carried on with great precaution—thus consuming much time. The structural castings were entirely new and untested, which accounted for the failure of one of the water-cooled stuffing boxes—to be described later. In addition to the newness of the furnace, the ore and coke used in the greater part of the run—substituted later by charcoal—were in a very wet condition; the coke containing as much as 40 per cent water; thus precluding the possibility—even if the short time at our disposal permitted—of determining the output satisfactorily. Towards the end of the run, one of the water-cooled stuffing boxes—through which the electrodes enter the melting chamber—developed a flaw, admitting water into the furnace. Had the castings been tested prior to their installation in the furnace, this mishap would not have occurred.

These serious disadvantages affected, however, only the output and not the operation of the furnace, which was satisfactory. It was found that the charge did not jam in the lower contracted neck of the shaft, as I had feared, but moved with regularity down into the melting chamber. The contraction at the neck of the stack produced the desired effect of so directing the charge that, the free space above-mentioned was maintained. The charging of the ore, flux, and charcoal, was effected with perfect ease, by means of apparatus similar to that used in blast furnace practice. Although the gas generated in the reduction of the ore was not circulated through the cooling tuyères—as previously described—until near the end of the run, it was demonstrated that the lining of the roof of the melting chamber was effectively cooled by this means.

No trouble was experienced in tapping the iron—the temperature at the iron notch being always too high to permit of freezing.

It may be well to state that, this experimental run was conducted not for the purpose of determining the output of pig-iron per electrical horse-power year, but to demonstrate the commercial applicability of the furnace. The output which might be expected, even in a small furnace, was satisfactorily ascertained by the long series of experiments at Sault Ste. Marie. With this furnace, however, even a greater output than that obtained at Sault Ste. Marie can reasonably be expected. Even under the unfavourable conditions above-mentioned, the output was steadily increasing as the furnace became warmer, until the leakage of water through the defective electrode stuffing box necessitated the cutting out of an electrode.

A full report is in process of preparation.

ELECTRIC STEEL FURNACE.

The inventors of the Electric High-furnace: Messrs. Grönwall, Stalhane and Lindblad, have recently obtained patents for an electric steel furnace which embodies some novel features. The chief feature is the employment of a three-phase current, with but two electrodes; the bottom of the hearth—composed of magnesite and a small quantity of graphite—constituting the third. Magnesite when cold is not a conductor of electricity; but when heated becomes a good conductor.

This distribution of the electrodes causes the bath to rotate in a vertical plane: continually bringing new material in contact with the slag for purification; thus reducing to a minimum the time required for refining.

PROCESS FOR MANUFACTURING ELECTRODES.

The electrodes employed during the experimental run at Domnarfvet were of a very superior quality, no trouble being encountered from pieces breaking off and dropping into the furnace, and interfering with its operation—as was the case experienced with those used in our experiments at Sault Ste. Marie.

Since a plant for the manufacture of these electrodes is in operation in Sweden, I availed myself of the opportunity to obtain the necessary information—supplemented by drawings—concerning their manufacture. Unlike other processes, the raw material is moulded under a high hydraulic pressure, and then baked for a considerable time at a temperature of about 1,200 degrees Centigrade. This method ensures a product possessing the following qualities: homogeneity, great hardness, and excellent conductive power, which latter property allows of a smaller section being used than with all other electrodes, except those made of graphite.

COMMERCIAL APPLICATION OF THE ELECTRIC HIGH-FURNACE IN EUROPE.

Scandinavian capitalists have lost no time in taking advantage of the iron ore smelting tests made at Domnarfvet. A powerful company in Norway has already signed a contract with the patent right owners of the Electric High-furnace described above, for the construction and installation of a large electric smelting and steel making plant, and rolling mill for billets and flat bars. (See Appendix I, p. 80.)

PROCESSES FOR THE REDUCTION OF REFRACTORY ZINC ORES.

In view of the great importance that a successful process for the reduction of refractory zinc ores would be to British Columbia, where large deposits of zinc ores of this character exist, I obtained, while in Sweden, all necessary details, drawings, and results concerning the two processes at present employed in that country: both of which are electro-thermic.

One plant for the handling of large quantities of zinc ore—soon to undergo enlargement and improvement—is, and has been, in successful operation at Trollhatten, Sweden.

A demonstration plant, employing the De Laval process, for the smelting of refractory zinc ores is in process of erection in London; but as at the time of my visit it could not be completed for several weeks I was unable to witness a practical demonstration.

During my stay in London I received a letter from Lord Strathcona, High Commissioner for Canada, requesting me to examine a bisulphite process for the treatment of refractory zinc ores, invented in Australia, and about to be tested at Swansea, England. The inventors claim that this process is successfully employed in treating the zinc ores of Australia, and that a recovery of all the zinc and silver is possible. Owing to the fact that this plant would not be ready for several days, I was unable to investigate the actual working of the process—but obtained details, results and drawings concerning it. Unfortunately, all the information concerning these three processes is confidential and cannot, therefore, be published.

INVESTIGATION OF PRODUCER GAS PLANTS IN GERMANY.

In pursuance of instructions to investigate producer gas plants in Germany, in the interests of the experiment fuel testing plant to be erected at Ottawa, Mr. B. F. Haanel—who in 1907 inspected producer gas plants in the United States, and who assisted me in the electric smelting investigations in Sweden—was deputed to visit representative producer gas plants in Berlin and vicinity, on our way back from Sweden. The advantage of selecting German plants for investigation will be obvious. Inasmuch as Germany has not been so bountifully provided by nature with coal fuel as Great Britain, the United States, and other countries, the problem of conserving the natural resources received early attention. Low grade fuels such as lignite (brown coal) were utilized in Germany before the question of substitutes for common coals was even considered by the more favoured countries. For the foregoing reason, together with the fact that, German investigators and inventors having been trained for more than a generation, have achieved phenomenal success in solving the problem of the efficient utilization of the potential energy stored in coals, Germany is manifestly the best country in which to study the most advanced modern methods, and the most efficient machinery employed for converting the energy of coal into useful work.

Many plants, used for almost every variety of purpose, are dotted all over Germany, and it is no uncommon sight to see a store, warehouse, or other establishment, even in the smaller towns, generating its own power with a producer gas plant.

The limited time available for this investigation rendered the inspection of many plants out of the question. It was decided, therefore, to visit some of the plants operating on anthracite, and bituminous coals, coke, and lignite (brown coal) briquets erected by the Körting Brothers, of Hanover, Germany; mainly because the experimental plant to be erected in Ottawa by the Department of Mines for testing fuels was constructed by that firm, and particularly since a special study of installations operating on their system would doubtless greatly aid the experimental work about to be undertaken.

In addition to the numerous power plants operating with the fuels mentioned above, there were some using gas generated from peat: in fact a central power station is now being erected on an immense peat bog of several thousand acres; for the purpose of generating power from the peat, and distributing it in the form of electrical energy to surrounding towns. It is hoped that the tests shortly to be made in Ottawa with the experimental peat-producer-gas plant will lead in this direction; stimulating to greater activity and in the right direction, those owning large peat bogs, and who have so far failed from lack of a proper knowledge of the subject.

EXPERIMENTAL PEAT-FUEL PLANT.

In view of the growing scarcity of wood, and the steadily increasing cost of coal, the question of substituting peat in place of these fuels—to some extent at least—is becoming a matter of national importance. The cost, in Winnipeg, of the poorest quality of wood (spruce and tamarack) is from $6 to $8 a cord, and of coal $10.50 per ton; which plainly indicates that, the fuel question as affecting a large part of the population, especially in the western provinces, is a very serious one.

In Ontario, Quebec, and New Brunswick, wood and coal are somewhat cheaper; but considering the saving to the country if part of the imported coal used in these provinces could be substituted by peat, every effort should be made to establish a peat industry.

The attempts so far made in Canada to manufacture a commercial peat fuel have been chiefly failures, and very little, if any, peat fuel is at present available. The principal cause of most of these failures was the ignorance of the nature of peat of those who so far had engaged in the manufacture of peat products. In several instances the bogs chosen for development were unsuitable for the purpose in view. A proper investigation of the bog previous to the commencement of operations has in very few instances been made, hence methods entirely unsuitable for the bog in question were employed, and failure was the inevitable result. These failures, involving a considerable loss of capital, have created a pronounced distrust in everything connected with peat, and the utilization of the peat bogs; as a result, the peat industry in Canada is at the present time in a very unsatisfactory condition.

In order to assist Canadian manufacturers of peat products, a comprehensive report has already been published by the Mines Branch, giving descriptions of, and the results obtained with, the processes employed in those European countries where the peat industry has proved successful; and, owing to the renewed interest evoked, a systematic investigation of the Canadian bogs has been started with a view of ascertaining the quantity and quality of the peat contained in these bogs.

Any person desiring to start a peat plant can, upon application to the Mines Branch, have his bog investigated; and it is hoped that such failures as have been due to the choosing of a bog unsuitable for the purpose for which it was intended, will in the future be avoided.

Another object of these investigations is, the protection of the general public, as far as possible. The results obtained will be published from time to time in bulletin form, and interested parties will have an opportunity of judging, to some extent, of the feasibility of the project they have in view.

The most far-reaching and practical manner, however, in which to awaken interest in the utilization of our peat bogs is, the establishment of an experimental plant; where peat fuel can be manufactured on a practical scale. At such a plant interested parties will have an opportunity of ascertaining for themselves the working of the bog, as well as the suitability of the peat fuel produced.

With a view of starting the manufacture of peat fuel as soon as the bog required for this purpose has been examined, levelled and drained, it is proposed to employ a method which has already proved successful, namely, air-drying the peat on the surface of the bog after it has passed through a pulping machine.

This method, notwithstanding its dependence on favourable weather conditions, is the only one which so far has given economical results.

A number of more or less different pulping machines and appliances for handling the pulped peat are employed in Europe. The best of these machines, however, as well as the best methods for handling the peat, are those invented and introduced by Mr. A. Anrep in Sweden.

A small Anrep peat plant with a capacity of twenty to thirty tons of air-dried peat per day, costs in Europe about $4,200. To this must be added the cost of 200 acres of bog at about $10 per acre; storehouse, transportation equipment, working expenses, etc., thus bringing the capital required during the first year to about $10,000.

A similar plant is also needed to furnish a sufficient supply of peat fuel for the peat gas power plant, which is being erected in Ottawa for the Department of Mines.

The main difficulties in the way of developing a peat industry on a large scale are (1) dependence on favourable weather conditions for drying; and (2) the comparatively short season during which the bog can be worked. Any assistance that can be rendered inventors of promising processes aiming to overcome these difficulties in working out their ideas, would undoubtedly be of great advantage. The object of a government experimental plant should also be to assist such inventors as far as possible, and to ascertain the practical value of their inventions. In several European countries aid from the respective governments is obtainable by inventors of peat machinery and methods for utilizing the peat bogs. In Sweden, a special fund of 3,500,000 kronor (about $950,000) has been set aside for this purpose, and for rendering assistance to the manufacturers of peat products.

Drying conditions in Canada are at least as good—if not better—than in most European countries. And notwithstanding the higher rate of wages in Canada, a properly managed peat plant should give satisfactory economical results.

The introduction of a fuel like peat is, however, an undertaking that cannot be expected to be accomplished in a year or two, but will require a long and aggressive educational campaign, in order to demonstrate the value of the products, as well as their manner of manufacture.

FUEL TESTING PLANT.

The following paragraph clearly indicates the advantages of a national fuel testing plant, as proved by the United States Geological Survey:—

"Although in 1904 the production of coal was not quite equal to that of the preceding year, greater activity than in any previous year was manifest throughout the country in prospecting and developing new fields and in efforts to determine better methods of utilization. This was largely due to the establishment of a coal-testing plant at St. Louis, for which Congress appropriated the sum of $60,000. The interest taken in this work by coal operators, coal consumers, and the general public, shows that the people are keenly alive to anything that tends to the cheaper production and the better utilization of the fuels of the country. The immediate results obtained during 1904 resulted in an appropriation for 1905 amounting to $202,000 for the continuation of the coal-testing work, and incidentally an increase was made in the

appropriation for geologic work of the Survey, with the express provision that this increase should be used in the investigation of the fuel resources of the country."

Since 1904 this fuel-testing work has been carried on steadily every year in the United States. At the present time the fuel-testing plant is installed in the old drill hall, Pittsburgh, which has been turned over to the United States Geological Survey.

The amounts appropriated for the testing of fuels by the United States Geological Survey, are as follows:—

1904	$ 60,000
1905	202,000
1906	250,000
1907	250,000
1908	250,000

which shows that this question is considered of considerable importance in the United States. The question is of no less importance to Canada, and a permanent testing plant equipped with the necessary apparatus and appliances for the proper testing of all kinds of fuels, will undoubtedly lead to greater economy in the use of our fuel resources, and assist in decreasing the present waste.

There is an unnecessary waste of fuels not only in the mining of same, but probably to an equal extent in their use. The latter waste could to a large extent be decreased if suitable apparatus were used for the effective and economical combustion of the different kinds of fuels.

The composition and quality of the different fuels vary widely: one coal, for example, is suitable for coking; while another cannot be used for this purpose—and so on.

Many of the coal fields of Canada are as yet only partially developed, and the probability is that coal deposits of which we at present know nothing, or very little, will in the near future be drawn upon. It is manifest, therefore, that the fuel-testing plant needs to be of a permanent character.

In order to procure reliable figures, it is, of course, necessary that the different tests should be made on a commercial scale, and with practical apparatus. In order to carry out this work properly, a special staff of men will be required, whose duty it will be to keep themselves well informed on all improvements and inventions for the better utilization of the fuels, as well as to co-operate with the field officers of the Department in making an intelligent estimate of the usefulness and value of the fuel resources of the country.

During the last two years, tests have been made at McGill University, Montreal, under the auspices of the Dominion Government—with some coals and lignites collected by an officer of the Mines Branch. The samples tested represent only a part of the known fossil fuel resources of the country; and since new coal fields are being frequently discovered, and those already partially developed will be rendered more accessible by the construction of railways, and hence become more productive, the work of testing will naturally increase in magnitude. Foreseeing this, it has been decided to continue the systematic testing of fuels by officers of the Mines Branch in the permanent building which is being erected by the Department of Mines at Ottawa.

Modern machinery and appliances will be installed, together with part of the plant now in use at McGill University.

This plan of concentrating these fuel-testing experiments, etc., at the most strategic centre, and having them conducted by the trained staff of the Mines Branch —under the immediate supervision of the Director of Mines, will, it is conceived, give more essentially practical results, capable of commercial application, than if the investigations were carried on in different parts of the country.

The first work will be to demonstrate the usefulness of the low grade fuels (peat and lignites) for power purposes. It is a well established fact that, the most efficient steam plant only utilizes about 15 per cent of the calorific value of the fuel, and a gas producer plant about 18 to 22 per cent. The saving in fuel obtained by the employment of the latter apparatus has, hitherto, not been duly appreciated in Canada; and it is hoped that by the publication of the results obtained with the government plant, as well as by practical demonstrations, this fact will be more widely known and utilized.

No peat-gas-power-plant exists as yet in Canada, although it has been proved that, in many cases, a suitable peat bog can compete as a source of power with more expensive water-powers. The fuel required can also contain a comparatively high percentage of moisture, hence the manufacture of peat fuel in accordance with the air drying processes, can be more thoroughly relied upon; even if the weather conditions are less favourable.

A practical demonstration of the use of the peat fuel which it is intended to manufacture at the experimental peat plant, will undoubtedly assist in placing the peat industry on a sound economic and commercial basis.

CHEMICAL LABORATORIES.

The two chemical laboratories were unusually busy during 1908. In the fiscal year ending March 31, 1908, 600 specimens were examined and reported upon; whereas in the nine months ending December 31, 1908, some 795 sent in, were identified or analysed.

The chief chemist—Mr. F. G. Wait—is engaged in the preparation of a detailed report of chemical analyses of special economic interest made during the last two years. This report will be a valuable acquisition to the Mines Branch list of technical publications of essentially practical interest.

DOMINION OF CANADA ASSAY OFFICE.

The report of the manager of the assay office, Vancouver, B.C., shows that a much larger volume of business was done during the nine months ending December 31, 1909, than in any year since the establishment of the branch—1901. The value of the gold bullion received was $1,583,138.43, while the total value of the business done in the fiscal year 1907-8, amounted to only $751,693.97. The largest previous total was in 1901-2, viz., $1,153,014.50. The main reason for the recent increase in the business done was, the diversion of Yukon gold to our Vancouver office; on account of the action of the Post Office authorities, in permitting the shipment of

gold by registered mail to the amount of 70 ounces, which reduced the cost of transportation.

ON THE TRANSFERENCE OF GOLD TO THE ROYAL MINT, OTTAWA.

Gold, like any other commodity, is sold by the producers to the highest bidders. If, therefore, it is desirable to divert the gold of the Yukon and British Columbia to our assay office at Vancouver, or, to the Royal Mint at Ottawa, it will be necessary to offer the producers terms which are at least as advantageous as those offered by the United States mint at San Francisco.

Our assay office exacts $\frac{1}{8}$ of 1 per cent on the gross value of each deposit. A like amount is exacted by the assay offices of the United States to defray the expenses of these collecting offices. The United States mints, however, *do not* make this charge; and since the mint at San Francisco is favourably situated as regards transportation of gold from the Yukon and Alaska, the producers save the charge of $\frac{1}{8}$ of 1 per cent by sending their gold direct to the San Francisco mint, rather than to the assay offices in Seattle or Vancouver.

If this charge of $\frac{1}{8}$ of 1 per cent, now exacted by our assay office were abolished, and the Post Office authorities consented to raise the limit of weight of individual parcels of bullion to be accepted by registered mail—when addressed direct to the Dominion of Canada Assay Office—from 70 ounces to 200 or 250 ounces, the shippers would prefer to send their bullion to Vancouver rather than to the United States mint, or the Seattle assay office. By the abolition of the charge of $\frac{1}{8}$ of 1 per cent our loss on $10,000,000 would be $12,500. The silver content of the Yukon gold, however, averages about 17½, hence the loss indicated would be more than offset, if the gold-silver bullion is refined and coined at the Royal Mint, Ottawa; as will be evident from the following calculation:—

"Ten million dollars value of bullion at $16 per ounce would represent 625,000 ounces of bullion, and 17½ per cent of the bullion being silver would give 121,528 standard ounces of silver, which, at 45 cents per standard ounce equals $54,687.60, and a dollar (United States) weighs 412·5 grains, or approximately $\frac{86}{100}$ ounces, so that 121,528 standard ounces which had cost us $54,687.60 would make $141,311.63, leaving a profit of $86,624.03."

PROPOSED NEW ASSAY BUILDING.

The plea urged in the Summary Report 1907-8, for the erection of a government owned assay building at Vancouver is more pertinent than ever. The rent paid for the building occupied by the Dominion of Canada assay office in Vancouver, B.C.—since its establishment in 1901, is as follows:—

July, 1901, to July, 1906, at $1,200 per annum.
July, 1906, to July, 1908, at $2,100 per annum.
July, 1908, to December, 1909, at $2,700 per annum.

During the seven years of occupancy the rent has increased 125 per cent.

The present lease expires December 1, 1909, when the probability is that the high rent charged will be still further increased. It is manifestly in the interest of economy, therefore, that immediate steps be taken to establish the Vancouver assay office in permanent quarters, by the purchase of a suitable lot, and the erection of a properly designed fire-proof building.

SCOPE OF INVESTIGATIONS IN THE FIELD.

The general field work during the past season consisted of the investigation of iron ore deposits in Nova Scotia and Ontario; examinations necessary for the preparation of monographs on the occurrence of tungsten, and on the gypsum deposits of Nova Scotia and New Brunswick; also additional work in the asbestos region of Quebec: having as its objective the publication of a second edition of the Mines Branch Report on Asbestos. Not the least important work achieved was an examination of the peat bogs of Ontario.

FIELD WORK.

The following is a brief synopsis of the work done by the respective field officers:—

Dr. J. E. Woodman spent the season gathering data necessary for completing his Report on the Iron Ore Deposits of Nova Scotia (Part II). Part I is now in the press.

Mr. B. F. Haanel examined, and made a magnetometric survey of Huron Mountain mine in the Timagami Forest Reserve. On account of the supposed geological similarity between this formation and that of the Moose Mountain Iron mine, the Department of Mines was strongly urged to make the investigation.

In addition, Mr. Haanel witnessed tests of the electric smelting of titaniferous ores at Welland, Ontario; and visited producer gas plants in Germany.

Mr. Howells Fréchette made a magnetometric survey of some iron ore deposits along the Central Ontario railway: including the Bessemer, the Child, and Rankin deposits. This work, which the Mines Department was also strongly urged to do, will be continued during the season of 1909.

Mr. Einar Lindeman was engaged in the investigation of iron ore possibilities along the line of the Port Arthur and Duluth railway. The territory through which this railway passes was supposed by parties interested in its development, to be well mineralized with iron ores.

Dr. T. L. Walker was engaged in examining the occurrences of tungsten ores in Canada, with a view of publishing a reliable, authentic report. The increasing demand for tungsten for electrical purposes, and in the manufacture of high speed tool steels; the lack of information with regard to known deposits of tungsten ores, and the difficulty of obtaining accurate knowledge concerning the metallurgical treatment necessary to prepare the tungsten for the market, rendered it imperative that a systematic investigation should be made.

Dr. Walker was originally instructed to include molybdenum in his investigation of tungsten; but the field work necessary to complete this urgent work, occupied so much time, that it was decided to reserve the examination of molybdenum until another season.

Mr. W. F. Jennison examined the gypsum deposits of Nova Scotia and New Brunswick, with the object of preparing a monograph on the same.

The following prospectus—taken from the memorandum accompanying the petition for this investigation—will indicate the range of the inquiry:—

(*a*) History, and distribution of gypsum deposits.
Varieties of gypsum.

(*b*) The gypsum trade history of Canada.
Statistics, and graphic chart of gypsum production.

(*c*) The geography and topography of Canadian gypsum deposits: with maps and photographs showing extent of these deposits, and facilities for manufacture and shipping.

(*d*) Thermal spring deposits from sea water by the action of iron pyrites on the carbonate of lime.

(*e*) Gypsum as a fertilizer: its use among ancient nations. Experiments by well known authorities. Theory of the action of gypsum as a fertilizer.

(*f*) The chemistry of gypsum, plaster of Paris, and cement plaster, with methods of analysis.

(*g*) Technology of gypsum.
General and physical properties.

(*h*) General requirements of a plaster mill, with illustrations, specifications, and cost of construction.
Chemistry of the manufacture of plaster.
Retarders and accelerators.

(*i*) The methods of operating, with costs.

(*j*) Markets, and value of produce.

It is hoped the publication of this monograph on gypsum will aid in stimulating the industry to such an extent that, the product of the immense deposits of high-grade gypsum in the maritime provinces will be manufactured in Canada, instead of being exported as raw material.

Mr. W. W. Leach—of the Mines Branch staff—spent the past season in British Columbia, completing his work in delimiting the coal and copper areas on Bulkley river and its vicinity. Inasmuch as this work was begun by, and belongs to, the Geological Survey Branch, Mr. Leach's report was made to the director of the last named branch.

Mr. J. G. S. Hudson has been occupied since July 15, 1908, in the preparation of a report on the 'Coal Resources of the Province of Nova Scotia.'

Mr. Fritz Cirkel was engaged in the early part of the year, completing his data for the Ontario section of the Report on the Mining and Metallurgical Industries of Canada; and, in the preparation of his monograph on the Chrome Iron Ore deposits in the Province of Quebec—now on the press; also in the investigation of new discoveries of asbestos, and inspecting new mills for its manufacture, in the Eastern townships of the Province of Quebec; mainly with the object of preparing a second edition of the Mines Branch report No. 11 on 'Asbestos: its Occurrence, Exploitation and Uses'—published in 1905. This report has proved so interesting that, the entire first edition is exhausted.

The following petition was presented to the Honourable the Minister of Mines, asking for the above investigation:—

SESSIONAL PAPER No. 26a

Letter of Transmittal.

CHATEAU FRONTENAC, QUEBEC, Canada, July 11, 1908.

The Honourable WILLIAM TEMPLEMAN, Esq.,
Minister of Mines, Ottawa.

DEAR, HONOURABLE SIR.—The undersigned begs to enclose a petition signed by a number of parties interested in the development of the asbestos industry. This petition sets forth the good services the Mines Branch under Dr. Eugene Haanel has rendered to this industry by issuing a monograph on the mineral asbestos, written by Fritz Cirkel. I may say that for the last three years, since that monograph was written, upwards of half a million dollars have been spent to advantage in new properties, mine and mill equipment in the asbestos district. As the conditions of this industry have changed a great deal since the writing of that monograph, which I think took place in the year 1904, a new edition of the same comprising the wonderful evolution of that growing industry, would be welcomed by every one who has the development of our asbestos resources at heart.

Canada is known to furnish for over 25 years the markets of the world with asbestos and as the demand for the Canadian article is steadily increasing, everything should be done that could contribute to the discovery and development of new ore bodies or to the manufacture of the ore into merchantable values.

I am only sorry that time does not permit to obtain additional signatures, as it is desired that this document should be presented before prorogation of parliament.

Trusting that the enclosed petition will receive your kind consideration.

I remain, honourable sir,

Yours most respectfully,

(Signed) P. ANGERS,
Notary.

BEAUCEVILLE, QUE.

Petition.

The Honourable WILLIAM TEMPLEMAN, Esq.,
Minister of Mines,
Ottawa.

HONOURABLE SIR,—The undersigned, who are interested in the operation of asbestos mines and the development of the asbestos industry in general, beg to submit to your kind consideration the following matter, viz.:—

For the last two years considerable activity has been displayed by capitalists, operators and prospectors in an asbestos field which by reason of its excellent asbestos fibre and the apparently large extent of the distribution of this mineral is destined to become a prominent factor in the production of asbestos in the Eastern Townships of the province of Quebec.

This new field—the Broughton Asbestos Serpentine Belt—has, as far as we know, not received the attention from the Department of Mines which its importance demands, and on this account much difficulty has been experienced in locating ore deposits. The economic possibilities are already evidenced by the fact that three mines and mills with a total capacity of 800 tons of asbestos rock per day are being operated now, while two more mills, those of the 'Frontenac Asbestos Mining Company, and the 'Boston Asbestos Company,' are in course of construction, adding when completed another 600 tons of rock per day. When these new mills are completed over half a million dollars have been spent in plant alone.

The undersigned have no doubt that if the boundaries of this new serpentine belt were properly mapped, thus giving much needed assistance to the operator, capitalist, prospector, as well as lot owners in the district under consideration, much more

valuable virgin ground would likely be discovered, and if properly developed would thus considerably enlarge the scope and the capacity of this industry.

For this reason the undersigned take the liberty of submitting to your kind consideration the following suggestions:—

(1) To send out a mining engineer thoroughly conversant with this district and its economic conditions, with instructions to determine the approximate boundaries of this new Broughton asbestos belt with a view to complete a map thereon.

(2) To issue a new edition of the Monograph on Asbestos, which was compiled by your Department in 1905, embodying all results of such recent investigations in the field, and also the conditions governing the industry at the present time. We may say that this first Monograph on Asbestos of 1905, on account of the valuable data it contained, especially from a geological and mining point of view, has aided the development of this industry in no small measure.

We trust—Honourable sir—that the reasons above stated are of sufficient importance to grant the wishes of the undersigned as set forth in this document, at an early date.

And your petitioners will ever pray.

Respectfully submitted:

Quebec, East Broughton, Beauceville, Broughton and Montreal.

The ninth day of July, 1908.

(SIGNATURES).

The publication of a second edition of the report on Asbestos (now exhausted) will not only bring it up-to-date; but will enable the Mines Branch to meet the constant demand for information on this subject.

Mr. ERICK NYSTRÖM—assisted by Mr. S. A. Anrep—spent the summer months examining and defining the boundaries of as many peat bogs in the Province of Ontario as time permitted. In addition to the actual field work, about 70 tons of dried peat were prepared at Beaverton, for use in the peat-gas producer to be installed at Ottawa.

Mr. THEOPHILE DENIS was engaged collecting samples of coals from Canadian mines in both east and west; for the coal tests now nearing completion at McGill University.

Dr. R. W. ELLS—on the staff of the Geological Survey Branch—was commissioned by the Mines Branch in May, 1908, (in compliance with the request contained in the following petition) to proceed to Scotland, Great Britain, with the object of witnessing and reporting on tests to be made with oil shales exported from New Brunswick; in order to ascertain their economic value: especially as regards the contents of crude oil and sulphate of ammonia:—

Petition.

Dr. EUGENE HAANEL, OTTAWA, April 4, 1908.
Director of Mines,
Ottawa.

MY DEAR DOCTOR,—Referring to our conversation this morning *re* the bituminous shales of New Brunswick, and my request for your Department to send a specialist to Scotland, I would say:—

That there are many reasons which may be advanced for the step which I have proposed, and which I think will be of benefit not only to the province of New Brunswick, but to the Dominion at large.

The distillation of shales in Scotland has grown to be a very large industry and also a very profitable one, and I am convinced that a similar industry can be established in Canada.

Dr. Ells, of the Geological Survey, in many reports from 1876 to the present time has set forth the value and the large quantities of these bituminous shales, and later he has stated they are one of our best assets in the province of New Brunswick.

We have forwarded to Scotland fifty tons for the purpose of making a special test of the different values contained in the shales. This distillation will be made for us under the supervision of Sir Boverton Redwood, of London, and Dr. Charles Baskerville, of the College of the City of New York. It is their purpose to submit this shipment to a most scientific test for all the valuable by-products. We think it will be of great value to the Geological Department of Canada, especially the economic feature of that department, that the government should send a representative to make an independent report on the distillation of this shipment. It will have the advantage of showing you the exact values of deposits of this nature, not only in our province, but in the whole Dominion. You have the asphalts of the northwest, the stellarite of Nova Scotia, with possibly many other undeveloped bodies of similar material in the Dominion, and all of which will have to be treated by the methods now employed in Scotland.

I, therefore, submit it is of the utmost importance your department should be thoroughly conversant with the development of this industry from its inception.

I trust that you will see your way clear to comply with our request and send your representative to Scotland to make an independent report upon the present shipment.

If you will kindly bring this to the notice of the government we will esteem it a great favour.

Yours truly,

THE ALBERTITE OILITE AND CANNEL COAL CO.

Per (Signed) M. LODGE.

(SIGNATURES).

A preliminary report on the tests made in Scotland, written by Dr. R. W. Ells, appears on page 64.

GENERAL CONSIDERATIONS.

Although the Mines Branch was hampered somewhat in the early part of the field season by the lateness in getting supplies; yet, substantial, practical work was achieved, as the list of preliminary reports shows.

The site for the fuel testing station at Ottawa was selected and bought; designs for the plant prepared, and the necessary apparatus and machinery purchased. During the summer of 1909, the building will be erected, and progress made with the installation of the experimental plant.

The work, however, which may have the most far-reaching results, was the examination of the Electric High-furnace in Sweden. This test of an electric furnace on a commercial scale, was the logical complement of the experiments made at Sault Ste. Marie in 1906: which settled once for all two important factors in the problem of electric smelting, (1) that sulphur can be eliminated from the bath down to a few

one-thousandths of one per cent, and (2) that coke as a reducing agency is not necessary; but can be satisfactorily replaced by charcoal: thus enabling Canada to smelt high-sulphur and refractory ores economically, in regions where coal fuel is not available, or its price prohibitory on account of the long hauls necessary to carry it to the ore deposits.

The fact that the initial step in solving the metallurgy of the reduction of iron ores by the electro-thermic process was taken by the Dominion Government in the experiments at Sault Ste. Marie—results which have been universally accepted, and which have now been successfully applied in the construction of an electric furnace on a commercial scale at Domnarfvet—places Canada in the forefront of an industrial movement which is destined to be of supreme importance in all countries where coal fuel is scarce, or entirely absent; but water-power and iron ore deposits abundant.

This new metallurgical process is of special advantage to Canada: particularly in provinces like Ontario, where coal fuel is absent; but where extensive deposits of refractory iron ores exist in comparatively close proximity to water-powers.

Realizing the importance of an iron industry to Canada, one of the chief aims of the Mines Branch has been to anticipate practical needs. For example, by making special investigations of the occurrence, in the Dominion, of tungsten and chrome ores; since the metals of these ores enter into the composition of high-speed tool steels. But while many of the iron ore deposits in various parts of the country have been determined and defined by means of magnetometric surveys, the fringe of the national resources has only been touched. If the supply of iron ores for even our own imminent smelting demands is to be forthcoming, it is of supreme importance that, the constant work of systematically exploring, investigating, and magnetometrically surveying the iron ore areas of the Dominion, should be greatly accelerated. This, however, can not be done without adding to the permanent staff technical officers capable of carrying out this necessary work.

Many other important fields in the domain of mining and metallurgy await systematic investigation—the reduction of cobalt-silver, zinc, and kindred ores by the electro-thermic process, for example; but this work has of necessity to be delayed, owing to the limited staff of permanent technical officers at my disposal. A like remark applies to the publication of statistical reports by the Division of Mineral Resources and Statistics. The earnest appeal for additional assistance by the Chief of the Division, on page 32, has my unqualified endorsation.

The inquiries from all parts, with regard to the mineral and metal resources of the Dominion—particularly with reference to the electro-thermic process of smelting ores—have been increasingly numerous; and the demand for our technical publications has been greatly augmented; all evincing active interest in the industrial development of the country. In fact, so urgent and pressing are the applications for the Report of the Commission on Electric Smelting, No. 3—now out of print—that the desirability of reprinting the same is under serious consideration. The correspondence for the nine months ending December 31, 1908, amounted to 2,786 com-

munications received, and 2,284 sent out. In addition to this, the correspondence of the Statistical Branch—outside of circulars—amounted to 1,807 letters received and sent.

I have the honour to be, sir,

Your obedient servant,

(Signed) EUGENE HAANEL,
Director of Mines.

REPORTS

ON

FUEL TESTING, CHEMICAL LABORATORIES, STATISTICAL DIVISION, AND ASSAY OFFICE.

COAL TESTS AT McGILL UNIVERSITY.

Considerable progress has been made during the past year in the systematic investigation of the coals of Canada—begun rather more than two years ago by Dr. A. P. Low, then Director of the Geological Survey, and now being continued by the Mines Branch—and which, it is hoped, will be completed in 1909.

The investigation has from the beginning been conducted at McGill University under the general direction of Dr. J. B. Porter, Professor of Mining Engineering; and the practical experimentation in 1908, as in 1907, was also done at that institution: the sampling, crushing, screening, washing, coking, and chemical analysis being under the immediate supervision of Dr. Porter; while the boiler tests, and producer and gas engine experiments were supervised by Mr. R. J. Durley, Professor of Mechanical Engineering. These professors were assisted by several members of the university staff, and by others specially appointed for this investigation.

CLASSIFICATION OF TESTS.

The work may be classified as follows: sampling, preparation and storage, washing, boiler tests, gas producer and engine tests, coking, and chemical analysis.

SAMPLING.

The samples were collected this year—as heretofore—by Mr. Theophile Denis of the Mines Branch, and in a few special cases by Dr. Porter and Mr. Stansfield. In all cases a responsible member of the staff supervised the work.

In accordance with last year's precedent, 19 ton samples were obtained from a number of representative mines; but in order to make a more detailed investigation without undue prolongation, or inordinate increase in expense, smaller samples were taken from many other mines; and in several cases, samples were taken from different parts of the same mine. In addition to the 19 samples obtained from Nova Scotia and New Brunswick last year (See Summary Report for 1907-8) 19 samples of from 7 to 10 tons; 12 samples of from 1 to 7 tons; and 3 samples of about half a ton weight have been obtained during 1908-9. Some 50 smaller samples—varying in weight from 500 to 2 lbs—have also been received. Of the 34 large samples, 6 are from Nova Scotia; 2 from Saskatchewan; 14 from Alberta; and 12 from British Columbia. Three of the 50 small samples were obtained by members of the Geological Survey staff from the Yukon; 14 are special samples taken in connexion with an investigation on the weathering of coals, and 18 are special samples procured for the coking tests.

PREPARATION AND STORAGE.

Each main lot of samples on arrival at the testing plant was unsacked, broken, passed through a 3" bar screen, and well mixed and sampled: the sample being

crushed to smaller sizes as the quantity was reduced. Finally, two samples of about 2 lbs. each, crushed to pass through a $\frac{1}{8}$" screen, were thus obtained for the chemist; and other portions reserved for heavy solution tests, and screen analyses. The remaining coal was re-sacked, and stored in a locked store house until required for the various tests.

In the cases where more than one sample had been taken from a mine which mixes its output before shipping, the several lots were separately sampled for the chemist, then thoroughly mixed and re-sampled. This re-sampling and mixing, although essential to a satisfactory study of the subject, greatly increased the work, not only in sampling, but also in the Chemical Laboratory.

The sampling was conducted by Mr. C. Landry, Chief Mechanic of the Mining Department, assisted by A. Lauriot and others.

COAL WASHING.

Before any coal was washed, research was carried on—chiefly by means of heavy solution separations—to determine the possibility of washing it to economic advantage. These experiments were made on 39 different coals: involving over 150 separations, and 300 determinations of ash.

Guided by these experiments, 10 coals were washed on a large enough scale to enable a full boiler trial to be made on the washed product.

Six small lots of coal were also washed. The method of washing was described in the Summary Report of the Mines Branch, 1907-8.

The various products of the washing plant were all sampled separately, and sent to the Laboratory for analysis.

An investigation was also carried on by means of mechanical crushing, followed by screening, to determine the friability of the coals and the proportion of ash carried in fine coal as compared with coarse. Thirty-two complete screen analyses were made, involving over 180 ash determinations. The relation between the constituents of coal —other than ash—before and after washing has also been under consideration.

The coal washing was conducted by Mr. H. G. Carmichael and Mr. C. Landry, assisted by a staff of mechanics and labourers.

BOILER TESTS.

Between the end of May, and the middle of September, 1908, a series of 37 boiler trials were conducted in the boiler room of the Department of Mechanical Engineering. The same boiler was used for each test, and the same methods employed as in the series of the previous year, described in the Mines Branch Report, 1907-8. The same fireman was employed throughout both series. The boiler, however, was completely overhauled, cleaned, and repaired before beginning this year's trial.

The equipment of the previous year was supplemented by the installation of a Simmance and Abady Automatic Carbon Dioxide Recorder; and a Randall and Barnhart Gas Analysis apparatus.

The two first trials made were repeat trials on coals tested the year before, in order to correlate the work of the two years. Twenty-five of the coal samples received this year were then tested in the boiler, and ten of these were re-tested after washing.

The testing staff comprised Mr. J. Blizard—in charge of tests; Mr. G. Killam and Mr. Geo. Guillet—observers and computers.

The actual working of the boiler plant was in the hands of F. Balmfirth—in charge of the boiler room, and J. Hoult—fireman.

The gas analysis was carried out by members of the Chemical Laboratory staff.

GAS ENGINE AND PRODUCER WORK.

The work of the gas producer plant during the year 1908-9, included the trials of the producer furnished by the Canada Foundry Company for the purpose of making

the tests on bituminous coals, and the installation and placing in operation of a bituminous producer designed by Professor Durley. After prolonged experiment it was found that the producer first named did not fulfil the requirements of the specification. The producer built in Montreal, however, was satisfactory in operation, and after some modification was found capable of carrying out the work. It was started on regular service in October, and from that time to the present the producer tests on the lignites and bituminous coals have been proceeding regularly. In all, up to April 1, about 30, official 24 hour tests have been made on bituminous coals, and on lignites from the Lethbridge, Edmonton, and Souris districts. A large proportion of the coal samples tested have proved to be suitable for use in gas producers. This is especially the case with the western lignites, which have proved better as gas producer fuels than when used for steam raising purposes. It is expected that the series of tests will be completed about the end of April, 1909.

In view of the many difficulties surrounding the satisfactory conduct of a gas producer test, it was decided that the length of each trial should be at least 24 hours. For some reasons a longer trial would be preferable; but lack of time and means rendered this impracticable in the present case. The method adopted in running the tests is as follows: The producer having been cleaned after the previous trial, is lighted up about six hours before commencing the trial, the engine being started under running conditions as soon as possible. Observations of the fuel fired, gas produced, etc., are taken during this preliminary period, and such necessary changes made in the depth of fuel bed, draft, and steam supply, as are found expedient to suit the particular fuel being used. The engine and producer are then run at as uniform a rate as possible for a further 24 hours, at the expiration of which time the engine is stopped, the fire in the producer drawn and quenched as rapidly as possible, and the resulting mass of half burned material sampled for analysis. In view of the small size of the producer and the limited amount of coal of each kind available, it was found preferable to run the tests in this way rather than to adopt the system of continuous running without drawing the fire between trials. Auxiliary tests have, however, been made to test the capacity of the plant for continous running, and to give a check on the correctness of the shorter experiments. It will be noted that each gas producer test involves from 30 to 36 hours continuous work.

The staff employed on the gas producer and engine tests was as follows: Mr. J. Blizard, in charge of observations and computations; Mr. J. S. Gardner, in charge of the operation of the engine and producer; Messrs. D. W. Munn, G. Killam and J. C. Cameron, observers and computers. The producer room staff also included two firemen and one labourer.

The gas analyses, and the analyses of samples of coal and refuse were carried out by members of the Chemical Laboratory staff.

COKING TESTS.

A series of coking tests are at present being carried out. This work may be divided into two parts: (1) an investigation into the possibility of making practical tests on the coking properties of coals on a small scale, and (2) the application of such tests to the different Canadian coals.

To satisfactorily test a coal in duplicate in an ordinary commercial coke oven would require a sample of at least 30 tons, and the expense in time, labour, and transportation would prohibit making more than a very few such tests. The advantage of having a good method for small scale tests is thus apparent.

The method developed by Dr. Porter, and used, consists in putting about 50 lbs. of coal into a thin metal box with a perforated lid, and placing this in a commercial oven in regular commission, in such a way that the box is entirely surrounded by the coal charged into the oven.

The investigation included researches into the effect of—(*a*) the position of the box in the oven, (*b*) the time of coking, (*c*) the compression of the coal, (*d*) the

moisture in the coal, (*e*) the use of different types of ovens, (*f*) the age of the coal sample, (*g*) the blending of a coking coal with a non-coking one.

Samples of the different cokes produced were kept for chemical and physical examination, and the yields of coke were also determined when possible. Samples of coke produced in the normal course in the ovens were taken for comparison with the test coke.

The preliminary investigations, which were carried out chiefly at Sydney in May and June, proved very successful, and tests have since been made on coals from all parts of the Dominion.

Altogether 124 boxes of coal have so far been coked:—

86 in Otto Hoffman ovens of the D.I. and S. Co., at Sydney, N.S.
28 " Bernard " N. S. S. & C. Co., at North Sydney, N.S.
2 " a Bauer oven " " " "
8 " a Beehive oven of the D. D. D. at Bridgeport.

Eight of these tests were carried out by Mr. Theophile Denis, and the remainder by Mr. Edgar Stansfield, at the works of the above named firms, who very courteously granted them every possible facility, and whose employees rendered great assistance. Thanks are also due to several colliery companies of Nova Scotia which supplied fresh samples of coals for comparison with older samples from the same mines.

The samples of coke have yet to be tested chemically and physically, and it is also proposed to conclude the main work by a series of tests in the Crowsnest district: to compare old and fresh samples of western coals.

The above coking tests are being supplemented by a special investigation which is being carried out in the Metallurgical Laboratories under the general supervision of Dr. Alfred Stansfield, Professor of Metallurgy. The object of this investigation is, to determine upon a satisfactory method of testing the coking properties of coal on a still smaller scale in the laboratory; and to ascertain the quantity and quality of gas and other by-products produced.

This work is being done by Mr. H. H. Gray, assisted by A. Hainsworth.

CHEMICAL LABORATORY.

The work in the Laboratory was continued in full force throughout the year. The most notable additions to the equipment were a gas analysis apparatus, by Messrs. Randall and Barnhart, and an apparatus for gas analysis over mercury, by Messrs. Bone and Wheeler. The work in the Laboratory is intimately connected with that of all the other branches of the investigation, and its scope may be gathered from the following list of samples received for each of the respective tests:—

Samples of coal.—One sample direct from mine.
One regular main sample of coal.

Washing tests.—Eight samples of 'floats' and 'sinks' from different specific gravity solutions.
One regular main sample of washed coal.
Three samples of washed coal of different sizes.
Nine samples of products from different parts of jigs.

Boiler tests.—One sample of coal charged.
One sample of refuse produced.
Twenty half hourly samples of flue gas.

Gas producer tests.—One sample of coal charged.
One sample of ash produced during run.
One sample of residue in producer at end of run.
Twenty-four hourly samples of gas

Coking tests.—One small sample for chemical tests.
One large sample for physical tests.
Gas samples.

The laboratory tests include determinations of carbon, hydrogen, nitrogen, oxygen, sulphur, carbon monoxide, carbon dioxide, ethylene, methane, hydrogen sulphide, sulphur dioxide, ash, volatile matter, fixed carbon, moisture, calorific value, specific gravity, friability, fusibility, porosity.

In addition to the regular work of the Laboratory, special investigations have been or are being carried out on the chemical methods employed, and on such points as the weathering and aging of coals, the calibration of gas meters, the drying of coals, the soluble constituents of coal, the determination of sulphur, the determination of volatile matter, water equivalent of calorimeter, etc.

The Laboratory staff is as follows: chief chemist—Mr. Edgar Stansfield; assistant chemist—Mr. J. H. H. Nicolls; and during parts of the year only—Messrs. R. T. Mohan, P. H. Elliott, R. S. Boehner, W. B. Campbell, E. J. Conway.

CHEMICAL LABORATORIES.

(a) SUSSEX STREET.

(b) WELLINGTON STREET.

F. G. Wait, M.A., F.C.S.

In carrying out the work outlined in the following report, both sections of the laboratory have been operated to their fullest capacity. The Wellington Street section has been under the direction of Mr. H. A. Leverin, M.E.; the Sussex Street section under that of myself, assisted by Mr. M. F. Connor, B. Ap. Sc.

By their zeal and close application, both Mr. Connor and Mr. Leverin have been able to perform a large amount of useful, directly practical work; but, with the services of only three chemists, it has not been possible to keep fully abreast of the work. The rapidly increasing number of specimens submitted to us makes it fully apparent that an additional skilled assistant will be required in the immediate future.

In the twelve months ending March 31, 1908, 600 specimens were examined and reported upon; whereas in the nine months, from April 1, to December 31, 1908—the period covered by the summary—795 were submitted to analysis, description or identification, as required.

A detailed report of such work as will be of public interest, which has been carried out during the past two years, is in course of preparation, and will be carried to an early completion.

The work embraced in this Summary may be conveniently arranged as follows:—

I. FOSSIL FUELS, comprising:—

(1) *Lignite*—11 samples from

(*a*) Saskatchewan—

i. Sec. 13, tp. 12, R. 24, west of 2nd meridian.
ii. Sec. 24, tp. 12, R. 24, west of 2nd meridian.
iii. Sec. 14, tp. 20, R. 16, west of 3rd meridian.

(*b*) Alberta—

i. From unsurveyed territory in the foothills of the Rockies, 200 miles west of Edmonton—4 samples.

(*c*) British Columbia—

i. Point Grey, near Vancouver.

(*d*) Yukon—

i. From a point four miles west of the 69th mile post from Whitehorse, on the Whitehorse and Dawson wagon road—2 samples.

(2) *Lignitic Coal*, 4 samples from:—

(*a*) Alberta—

i. From unsurveyed territory in the foothills of the Rockies, 200 miles west of Edmonton—4 samples.

(3) *Coal*, 14 samples from:—

(*a*) Newfoundland—

i. Alderly, St. George bay.
ii. Codroy.
iii. Grand lake.

(*b*) Alberta—
i. From a 4 foot seam on Grave creek in the Bighorn coal basin.
ii. From a 7 foot seam on the banks of an unnamed tributary of the Brazeau, in the Bighorn coal basin.
iii. From an undefined locality south of Frank—2 samples.

(*c*) British Columbia—
i. Goat creek, Omineca mining division—2 samples.
ii. Morice river, Omineca mining division.
iii. Clarks forks, Morice river, Omineca mining division.
iv. Coal creek, Zymoetz river, Skeena River mining division.
v. Zymoetz river, Skeena River mining division.
vi. Vicinity of Vermilion forks.

(4) *Anthracitic Coal*, 2 samples from:—

(*a*) Alberta—
i. Sec. 1, tp. 25, R. 11, west of 5th meridian.

(*b*) Yukon—
i. From the outcrop of a 6 foot seam, situated one-quarter of a mile east of the roadway opposite the 114th mile post from Whitehorse, on the Whitehorse and Dawson wagon road.

(5) *Anthracite*, 1 sample from:—

(*a*) Quebec—Bonaventure county.
i. From the north bank of the Restigouche river, some 10 miles from its mouth.

II. Peat—24 samples, from:—

(*a*) Ontario—
i. Bruce county—East half, lot 9, con. 11, Greenock tp.
ii. Perth county—Drummond township—3 samples.
iii. Prescott county—Alfred township—2 samples.
iv. Russell county—Gloucester township—'Mer Bleu'—7 samples.
v. Stormont county—Newington peat bog—7 samples.
vi. Victoria county—Victoria Road.
vii. Welland county—Humberstone and Wainfleet townships—3 samples.

III. Iron Ores—101 samples, which may be classed as:—

1. *Magnetites*, from:—

(a) Nova Scotia—
i. Cape Breton county—1 sample from Grand Mira.
ii. Inverness county—1 sample from Whycocomagh.

(*b*) New Brunswick—
i. Gloucester county—4 samples.

(*c*) Quebec—
i. Timiskaming district—1 sample.

(d) Ontario—
i. Hastings county—vicinity of the Orton mine.
ii. Timagami district—claims 1346, 1347, 1348 of the Huron Mountain mine—40 samples.
iii. Timiskaming district—locality not specified.

2. *Hematites*, from:—

(*a*) Nova Scotia—
i. Antigonish county—1 sample.
ii. Cape Breton county—22 samples.
iii. Colchester county—7 samples.

iv. Cumberland county—2 samples.
v. Guysboro county—3 samples.
vi. Richmond county—10 samples.

(*b*) Ontario—
i. Thunder Bay district—Gunflint lake.

(*c*) Mackenzie district—1 sample from Gravel river.

3. *Limonite, bog iron ore and iron ochre,* from:—

(*a*) Nova Scotia—
i. Colchester county—1 sample.
ii. Lunenburg county—1 sample.

(*b*) New Brunswick—
i. Sunbury county—One mile from Tracey station, Canadian Pacific railway.

(*c*) Ontario—
i. Muskoka district—Lot 29, con. 5 of Oakley township.

(*d*) Yukon—
i. Vicinity of Takhini Spring.

IV. Copper Ores—24 samples from:—

(*a*) Nova Scotia—
i. Colchester county—Two miles north of Dekert station, Intercolonial railway. (Copper content 1·40 per cent.)

(*b*) New Brunswick—
i. Carleton county—Parish of Northampton. (Copper 4·60 per cent.)

(*c*) Quebec—
i. Compton county—Moes River valley.
ii. Megantic county—Southwest quarter of lot 14, R. 14 of Leeds.
" Southwest quarter of lot 14 B, R. 13 of Leeds.
iii. Sherbrooke county—Castle Brook township, near Orford mountain.

(*d*) Ontario—
i. Algoma district—Lot 10, con. 5 of Cobden township.
ii. Nipissing district—Lot 2, con. 6 of James township.
" Southeast quarter of the south half of lot 6, con. 6 of James township.
" Southwest quarter of the south half of lot 5, con. 6 of James township—2 samples.
" Lot 2, con. 3 of Field township.
iii. Timagami district—T. R. 1512.
iv. Five specimens, the locality of occurrence of which was not stated.

(*e*) Alberta—
i. Vicinity of Elden.

(*f*) British Columbia—
i. Certainty mine, Canyon creek.
ii. Canyon creek—locality not defined.
iii. United Empire group of claims.
iv. Moresby island—Pacific coast.

V. Ores of Nickel and Cobalt—3 samples from:—

(*a*) Ontario—
i. Nipissing district—James township—Lots 5 and 6, con. 6—2 samples.
ii. Nipissing district—Dundonald township—Lot and concession not specified.

(*b*) British Columbia—Locality not specified—1 sample.

VI. Manganese Ores—4 samples from:—

(*a*) Nova Scotia—
i. Cape Breton county—Boulardarie island.
ii. Lunenburg county—location not specified.

(*b*) British Columbia—
i. Hudson Bay mountain—Skeena River mining division.

VII. Limestones and Dolomites—206 samples from:—

(*a*) Nova Scotia—
i. Antigonish county—1 sample.
ii. Cape Breton county—100 samples.
iii. Colchester county—2 samples.
iv. Cumberland county—3 samples.
v. Guysborough county—8 samples.
vi. Inverness county—48 samples.
vii. Richmond county—13 samples.
viii. Victoria county—12 samples.
ix. Yarmouth county—1 sample.
x. Two samples, the locality of occurrence of which was not stated.

(*b*) New Brunswick—
i. Albert county—1 sample.
ii. St. John county—6 samples.

(*c*) Quebec—
i. Wolfe county—canton of Weedon—4 samples.

(*d*) Ontario—
i. Bruce county—Lot 9, con. 11 of Greenock township.
ii. Timagami district—1 sample.
iii. Manitoulin island—2 samples.

(*e*) British Columbia—
i. Vicinity of Trail—1 sample.

VIII. Brick and Pottery Clays—8 samples from:—

(*a*) Nova Scotia—
i. Inverness county—Diogenes brook, Denys River district.

(*b*) Ontario—
i. Bruce county—Lot 9, con. 11 of Greenock township.
ii. Manitoulin island.

(*c*) Manitoba—
i. Vicinity of Riding mountain, on Canadian Northern Railway land.
ii. Two specimens from undefined localities.

(*d*) Alberta—
i. From the Morden estate on sec. 22, tp. 30, R—1 sample from the east side, and one from the west side of the town site of Pincher Creek.

IX. Graphite, and Graphitic Schists—4 samples.

These were examined with the view of ascertaining the amount of the carbon contained in them. They were from:—

(*a*) New Brunswick—
i. York county—from Meductic, on the St. John river.

(*b*) Ontario—
i. Renfrew county—lots 9 and 10, con. 2 of Lyndoch township—2 samples.

(*c*) Manitoba—
i. Sec. 9, district of Riding mountain.

X. Rock and Mineral Analyses.

Two samples of chromite, and one of serpentine from the province of Quebec; and 1 of granite from Timagami district in Ontario have been analysed and reported. Much progress has also been made in the analysis of a series of 26 rocks from the Boundary district of southern British Columbia. The work upon these latter was not fully completed before the close of the period covered by this summary. They will appear in a subsequent report. This work has been carried out by Mr. M. F. Connor.

XI. Gypsum—8 samples from:—

(*a*) Nova Scotia—

i. Cape Breton county—East bay—4 samples.

ii. Victoria county—South bay, and Middle harbour—4 samples.

XII. Natural Waters—2 samples from:—

(*a*) Quebec—

i. Cape Breton—East bay—4 samples.

XIII. Furnace Assays for Gold, Silver, and Platinum—151 samples of material from all but one province of the Dominion, as follows:—

(*a*) Nova Scotia—3 samples.
(*b*) New Brunswick—12 samples.
(*c*) Quebec—29 samples.
(*d*) Ontario—48 samples.
(*e*) Manitoba—2 samples.
(*f*) Saskatchewan—6 samples.
(*g*) Alberta—2 samples.
(*h*) British Columbia—19 samples.
(*i*) Undefined localities—40 specimens.

XIV. 'Alum Rock,' so-called, from Vancouver island.

An interesting occurrence of what is locally known as 'alum rock,' has been met with in considerable quantity at Kyoquot sound, Vancouver island.

The first specimen sent, proved to be a partially altered feldspathic rock, containing no trace whatsoever of aluminium sulphate.

A subsequent sample—of the same general outward appearance—yielded, to hot water, nearly 10 per cent of its weight of aluminium sulphate,

A quantitative analysis of the material is under way.

XV. Miscellaneous Examinations.

Under this heading, are grouped upwards of 215 specimens—covering a wide range of material—which were not thought to be of sufficient importance to entitle them to be placed in the foregoing classification. In many instances no particulars of locality or mode of occurence were furnished; in others a description, or identification of species sufficed: while in a few others, a determination of one or more constituents was required.

In all cases report was made, either orally, or by letter to the party most directly interested.

REPORT OF THE DIVISION OF MINERAL RESOURCES AND STATISTICS.

J. McLeish, B.A., Chief of Division.

The work of this Division was explained and reviewed at considerable length in the last Summary Report for the fiscal year 1907-8.

During the past nine months, 1908, the work of the Division has been carried on under difficulties similar to those existing during the previous year, viz., a smaller staff than formerly and a greatly increased volume of work. These conditions have resulted in undue delay in the completion of our final annual reports on mineral production. By exerting a special effort, however, we have succeeded in compiling and publishing a preliminary report on the mineral production of Canada on or about March 1, each year.

Our Preliminary Report on the Mineral Production of Canada in 1907 was completed and sent to press on February 27, 1908. The report was received from the printers and distributed during the following week. Copies were distributed at the annual convention of the Canadian Mining Institute held at Ottawa, March 3, 4, 5, 1908, and a paper on the mineral production during the year was also read at this meeting, thus placing information concerning our mineral output before the mining community and the public at the earliest opportunity.

In connexion with the early publication of this preliminary report acknowledgments are due to the various provincial mining bureaus for their hearty co-operation in furnishing estimates: and particularly to the Provincial Mineralogist of British Columbia for a detailed preliminary estimate of the mineral production in that province; also to several of the railway corporations for furnishing statements of the shipments of ores from stations on their lines. Although the figures of output are subject to some variation in the final report—necessarily published much later in the year—the early publication of the material in this form is very useful; since the statistics and general résumé of the mining progress given, furnish a fairly approximate estimate of the mineral output during the year.

It is the desire and object of the department not only to furnish the public with the means of obtaining a broad knowledge of Canada's mining industries and resources, and to supply information that will attract the investment of capital for the development of these resources; but also, to be of as great service as possible to those directly interested in our mining industries.

The revised Annual Report on the Mineral Production in Canada in 1906, the completion of which was delayed for reasons already set forth, was sent to the printers on July 23. The annual report for 1907 was well in hand toward the close of the year, but interference of other work and the absolute necessity of devoting our whole attention to collecting the statistics and compiling the preliminary report for 1908 caused it to be set aside for the time being.

Considerable time was devoted to the preparation of special statistical reviews, including a brief statistical review of mining in Canada; a statistical review of mining in Nova Scotia; statistical review of mining in Quebec, and statistical tables of mineral production in Ontario, etc. These were all incorporated and published in the Report on the Mining and Metallurgical Industries of Canada, 1907-8, recently issued by this department.

Commencing August 24, and continuing through September, the Canadian Mining Institute conducted an excursion through Canada, visiting nearly all the impor-

tant mining districts, with the object of demonstrating to those taking part, Canada's mining possibilities. Accompanying the excursion as guests of the Institute were representatives of the chief mining and metallurgical societies of Great Britain and Europe, gentlemen of international reputation in the mining world; also a number of distinguished mining engineers of Europe and America travelling in a private capacity.

Acting on your instruction, I joined the excursion at Toronto on September 3, and accompanied them throughout the Ontario and western tour.

In Ontario, visits were made to the silver mines at Cobalt, the nickel-copper mines and smelter in the Sudbury district, and the iron mine at Moose mountain.

In the west, the itinerary included visits to the natural gas wells at Medicine Hat; coal mines at Coleman, Hosmer and Fernie; St. Eugene silver-lead mine at Moyie; Bonnington Falls power plant; metallurgical works of the Consolidated Mining and Smelting Company at Trail, B.C., and the gold-copper mines of Rossland: including the Le Roi; Le Roi No. 2; Centre Star and War Eagle mines. The Boundary district was next visited: the mines and smelters of the British Columbia Copper Company at Greenwood; the mines at Phœnix, and smelter at Grand Forks of the Granby Consolidated Mining, Smelting and Power Company receiving special attention. Returning to Nelson, a visit was made to the Blue Bell mine, Kootenay lake, after which the excursion proceeded to Victoria. On Vancouver island a short stay was made at the Tyee Copper Company's smelter at Ladysmith; the party then proceeding to the mines of the Western Fuel Company at Nanaimo.

On the return journey east, a visit was made to the anthracite coal mines and briquetting plant at Bankhead, Alta., operated by the Bankhead Mines, Limited.

The above is but a mere outline of a journey which has been fully described in a report of 370 pages by the secretary of the Canadian Mining Institute, and published as a quarterly bulletin of that society.

The objects of the excursion were well expressed by Dr. Willet G. Miller, Provincial Geologist of Ontario, when he said it was thought 'that it would be beneficial to the mining interest of this country if representative mining engineers of Great Britain and abroad could be given an opportunity of seeing for themselves something of the great and unique mineral resources of the Dominion: of noting the important developments that have taken place in recent years, and of thus carrying away with them a fair conception of the actual position of our mining industry.'

The results will no doubt be of great benefit in the development of Canada's mineral resources.

It was expected that representatives of most of the provincial mining bureaus would take part in this excursion, and that opportunities would be presented for the discussion of problems relating to the securing of greater uniformity in the collection, compilation, and publication of mining statistics, and mineral production generally.

Unfortunately the opportunities for such conferences were fewer than was anticipated; although much valuable interchange of opinion on the subject took place.

In order to give a better understanding of some of the difficulties to be overcome, attention is directed to the following facts:—

In Canada there are nine separate and distinct provincial legislatures; each of which—with two or three exceptions—has entire control of its mining lands, mining laws and regulations: while the Dominion Government controls the mining lands and administers the mining laws and regulations in the Yukon and unorganized territories; also the selling or leasing of mining lands or mining rights in the provinces of Alberta, Saskatchewan and Manitoba.

The provinces of Nova Scotia, Quebec, Ontario and British Columbia publish annual reports of their respective mining bureaus or departments: which contain annual statistics of mineral production, in addition to general information concerning the mining industry.

It is safe to say that, in no two of these provinces are the mineral statistics collected and presented in exactly the same way.

The Dominion Government also, through the Department of Mines, provides for the collection and publication of mining statistics (6-7 Edward VII., Chap. 29, sec. 6 (*a*)): and this work is to a large extent done independently of the provincial bureaus.

Some of the differences in the methods of collecting and publishing statistics are shown in the fact that, all the provinces do not use the same commercial or business year. For instance, in Nova Scotia the year used is the period of twelve months ending with September. In British Columbia, while the year used is ostensibly the calendar year, the figures of production of the metals represent the smelter returns received only during that year. In some cases the total output whether shipped or not is included as production; while in other cases, only the actual sales or shipments are included as production. Methods of valuation also differ. In Nova Scotia no attempt is made to value the production. In Ontario the shipping value, or the value computed at the mines or works is used. In British Columbia the metals are valued at the average price of the metal for the year in the New York metal market—as a basis, with a deduction in some cases of 5 or 10 per cent. Metallurgical products, made in Canada from imported ores, are in some cases included as a mineral production of the province in which they are manufactured, while in other cases they are not included.

It is not unreasonable to suppose that, the various provincial mining bureaus could agree on the calendar year as the period of time to be covered in the collection of statistics, and that they could also agree on a uniform method in their collection and publication.

The mining statistics collected by the Department of Mines, are, of course, collected and compiled on a uniform basis for the whole Dominion; but when these are given in detail there is sometimes an apparent conflict with the provincial statistics; whereas there is no conflict, only a different point of view.

In the absence of provincial uniformity, however, we shall endeavour to make the mining statistics published by this Division not only comprehensive, but also give the returns in as much detail as possible without disclosing the source of confidential returns.

In my Summary Report for 1907, attention was drawn to the fact that, owing to the reduction in the staff of this Divison (formerly three technical officers and two clerks; now one technical officer and two clerks) our work had fallen in arrears. It was also pointed out that, to properly discharge the functions of the Mines Branch, viz., 'To collect and publish full statistics of the mineral production, and of the mining and metallurgical industries of Canada, and such data regarding the economic minerals of Canada as relate to the processes and activities connected with their utilization, and to collect and preserve all available records of mines and mining works in Canada,' would at the very least demand the re-establishment of the Division to its former strength.

Our statistical work alone, is now at least three times as great as it was a few years ago, and requires to be done in much greater detail. Other functions have been added to our duties: such as the checking and entering up of the Vancouver assay office computations. Although a mere detail, this work alone occupies a considerable portion of the time of one clerk. Moreover, as pointed out last year, regular field work—in the shape of personal visits to mining localities and mining operators—is necessary to enable the compiler of statistics to properly understand and co-ordinate them. The majority of mining operators are willing to furnish very complete information concerning their operations to a personal applicant, while few will take much trouble to answer correspondence. The duty of keeping up to date the information published in the report on the Mining and Metallurgical Industries of Canada—which now devolves upon this Division, is a work which will require very considerable attention, while the republishing of this

report, which will be required every few years, will necessitate special assistance for that purpose.

Although this report is intended to cover the calendar year, we may add that, during the months of January and February, 1909, we have, as usual, succeeded in collecting and compiling sufficient information on which to base a Preliminary Report on the Mineral Production in Canada in 1908. The revised statistics of production in 1907 were also included.

The report was completed and sent to the printer on February 25, 1909, received the following week, and immediately distributed to the mining community. In order that it may reach a wider circulation, it is re-printed herewith, as appendix II.

DOMINION OF CANADA ASSAY BRANCH.

VANCOUVER, B.C., February 26, 1909.

SIR,—As instructed in your valued favour of the 15th inst., I beg to enclose a Summary Report (in quadruplicate) covering the operations of the Assay Office for the nine months ending December 31, 1908, and embodying suggestions as to the future utility of the office to the public.

I have also enclosed reports from the Chief Assayer and Chief Melter for nine months ending December 31, 1908.

I regret that my report is not more complete, but the residues, etc., had not been sold and I did not have the necessary data in regard to expense for premium on bonds, stationery, telegrams, printing, etc., to show percentage of net expense to deposits. I have not entered any of the disbursements made at Ottawa for the Assay Office.

As instructed by your letter of January 9, I was arranging to dispose of residues, etc., so as to make a Summary Report at the close of the Fiscal Year on March 31, but will continue with these preparations and clear out everything so as to commence the new fiscal year with a clean slate.

I am, sir,

Your obedient servant,

G. MIDDLETON,

Manager.

E. HAANEL, Ph. D.,
Director of Mines,
Ottawa, Ont.

REPORT COVERING THE OPERATIONS OF THE DOMINION OF CANADA ASSAY OFFICE, VANCOUVER, B.C., DURING THE NINE MONTHS ENDING DECEMBER 31, 1908.

G. Middleton, Manager.

There were 590 deposits of gold bullion received; Nos. 752 to 791 inclusive, and Nos. 793 to 1342 inclusive. The aggregate weight of the deposits before melting was 90,175·48 troy ounces, and after melting 89,117·76 troy ounces, showing a loss in melting of 1·1730 per cent. The average fineness of the resulting bullion was 0·801½ gold and 0·191 silver. The net value of the gold and silver contained in deposits was $1,583,138.43.

The gold bullion received during the nine months ending December 31, 1908, came from the following sources:—

Source.	Deposits.	Weights.		Value.
		Before Melting.	After Melting.	
		Ozs.	Ozs.	$ cts.
Yukon	188	60,132·56	60,002·84	1,002,176 84
British Columbia	351	24,429·21	29,549·94	494,121 76
Alberta	5	77·33	69·05	1,223 76
Alaska	16	5,536·38	5,597·00	85,616 07
	590	90,175·48	95,308 83	1,583,138 43

	Ozs.
Weight before melting	90,175·48
Weight after melting	95,308·83
Loss by melting	1,185·89
Loss percentage by melting	1·229

The following table shows the business done by the Assay Office since its establishment:—

Fiscal Year.	Deposits.	Weights.	Value.
		Ozs.	$ cts.
1901-2	671	69,925·67	1,153,014 50
1902-3	509	36,295 69	568,888 19
1903-4	381	24,516·36	385,152 00
1904-5	443	29,573·73	462,939 75
1905-6	345	21,050·83	337,820 59
1906-7 (nine months)	269	20,695·84	336,675 65
1907-8	482	46,540·25	751,693 97
1908 (nine months)	590	90,175·48	1,583,138 43

Credits and disbursements for the purchase of gold bullion and receipts from sale of same during the nine months ending December 31, 1908:—

——	Credits.	Disbursements
	$ cts.	$ cts.
Credits established		1,500,000 00
Refund by draft No. 13736, July 14, 1908, to Deputy Minister, Ottawa, for overpayment on deposit No. 838		6 16
Disbursements for purchase of bullion:		
Cheques Nos. 752 to 791 inclusive	39,373 18	
Cheques Nos. 793 to 1342 inclusive	1,439,526 82	
Cheque No. 792, refund to U. S. Assay Office, Seattle, for overpayment to us on bar No. A-2, residue 1907-8	21 88	
Unexpended balance of credit Dec. 31, 1908	21,084 28	
	1,500,006 16	1,500,006 16
Proceeds from sale of bullion during nine months ending Dec. 31, 1908	1,431,967 60	
Value of bullion on hand Dec. 31, 1908—Bars Nos. 1295, 1296, 1298, 1299 and 1301 to 1342 inclusive	47,731 86	
Disbursements for purchase of bullion:		
Cheques Nos. 752 to 791 inclusive		39,373 18
Cheques Nos. 793 to 1342 inclusive		1,439,526 82
Cheque No. 792, refund to U. S. Assay Office, Seattle, for overpayment to us on bar No. A-2, residue 1907-8		21 88
Difference in favour of Dominion of Canada Assay Office		777 58
	1,479,699 46	1,479,699 46

Residue on hand December 31, 1908.

Slag from melting of bullion	350·00 lbs.
Granules	10·50 ozs.
Cornets	12·75 "
Silver	85·00 "
Mercury	9·00 lbs.

Thirty-eight empty Winchesters.

Contingent expenditures for nine months ending December 31, 1908.

Rent	$1,875 00
Fuel	274 11
Power and light	142 67
Postage and telegram	15 40
Telephone	44 00
Express charges	1,163 08
Assayers' supplies	179 50
Contingencies	117 56
	$3,811 32

CHANGES IN ASSAY OFFICE STAFF.

Miss Evelyn Tierney, Computer and Bookkeeper, resigned August 31, 1908.

Mr. Ross H. Fillion was employed as Temporary Clerical Assistant July 7, 1908, and appointed to succeed Miss Tierney as Computer and Bookkeeper, September 1, 1908.

Mr. Percy W. Thomas employed as Temporary Assistant Assayer July 22, 1908, and services dispensed with September 30, 1908.

IMPROVEMENT OF EQUIPMENT.

An electric burglar alarm has been applied to the vault and connected with the office of the British Columbia District Telegraph and Delivery Company.

ASSAY OFFICE BUILDING.

The lease of the building now occupied by the Dominion of Canada Assay Office, Vancouver, expires December 1, 1909, and I understand that a renewal may be refused unless at an advance over the present rent, which is $225 per month. I would, therefore, respectfully suggest that a lot not less than 50×120 feet be purchased, and a suitable building erected for the assay office.

SHIPMENTS OF BULLION BY REGISTERED MAIL.

Most of the bullion sent from the Yukon and Northern British Columbia to the Dominion of Canada assay office, Vancouver, is shipped by registered mail, and several of the largest shippers ask that the limit of weight of the individual parcel of bullion to be accepted in future by the Postal authorities for shipment by registered mail be increased from 5 to 15 pounds, but only ask for that privilege to be extended when the bullion is addressed to the Dominion of Canada assay office, Vancouver.

In explanation of the above they complain that it takes much time and expense to prepare bullion for shipment in 5 pound parcels, and as the Postal authorities place thirty 5 pound parcels of bullion in a mail sack, to make up the units of a large shipment to 150 pounds each, it would not matter, from a transportation standpoint, whether the individual parcel of bullion weighs 5 or 15 pounds, but the latter weight would be a valuable concession to the shippers, and would incidentally assist in diverting the output of the Yukon and Northern British Columbia gold mines from a foreign to a Canadian market.

MARKETING OF GOLD FROM THE NORTH.

Regrets are often freely expressed by our leading commercial citizens that San Francisco and Seattle instead of Vancouver have reaped the enormous trade benefits and financial prestige accompanying the marketing of the output of the Yukon and Northern British Columbia placer gold mines. The gold output of the Yukon is again on the increase, and in the course of another year or two it will probably be

larger than at any time in its history. The bulk of the Yukon gold output apparently would have been marketed at the Dominion Assay Office, Vancouver, during the past season, if the charges imposed had been satisfactory to the shippers.

Practically the only difference between the charges imposed at the San Francisco mint and the Selby Smelter, and those in force at the Dominion of Canada assay office is the extra charge imposed at the latter of ⅛ to 1 per cent on the gross value of the gold and silver contained in the bar. The greater part of the gold output of the Northern placer mines will likely be shipped to the Dominion of Canada assay office the coming season if the wishes of the shippers are met, in regard to increasing the weight of parcels of bullion to be accepted by registered mail, and if the following charges are imposed:—

1st charge.—Melting charge: $1 on each melt.

2nd charge.—Toughening and alloy charge: 2 cents per ounce on 1/11 of the standard weight of gold contained in the deposit.

3rd charge.—Parting and refining charge: 4 cents per ounce on the weight after melt.

The first charge is not imposed at present on gold from the Yukon on which the Royalty has been paid. If we purchase bullion during the season to the value of say $5,000,000 we would receive $6,250 less in charges by not imposing the charge of ⅛ of 1 per cent on the gross value of the deposit, which would be offset, to a certain extent, by imposing the melting charge of $1 on each melt.

Supplies on hand in the Melting Department on December 31, 1908.

3	sets of linings, supports and covers complete, for No. 1	size furnace.			
4	"	"	"	2	"
3	"	"	"	4½	"
4	"	"	"	7	"
4	graphite crucibles				No. 6
22	"				" 10
77	"				" 16
37	"				" 30
28	"				" 40
61	"				marked 0 0 0
3	crucible covers				No. 16
3	"				" 9
8	"				" 50
4	graphite stirrers.		10 lbs. of Carbonate of Soda.		
4	lbs. of Pot. Nitrate.		9 lbs. of Borax Glass.		

[Signed.] D. Robinson,
Chief Melter.

Inventory of Residues and Supplies on Hand in Assayers Department, Dec. 31, 1908.

Silver discs, 650 mgrm	41·47	ozs.
" " 50 "	20·37	"
" " 25 "	2·84	"
" bars	85·00	"
Gold cornets	12·75	"
" proof	10·32	"

Lead foil, about	70·00 lbs.
Granulated zinc	1·00 "
" lead, about	6·00 "
Litharge	25·00 "
Calcic chloride	1·00 lb.
Copper wire	1 spool.
Cupels, about	8250
Bone ash, about	35·00 lbs.
Nitric acid	10 Winchesters.
Ammonia	1 Winchester.
Hydrochloric acid	$\frac{1}{8}$ "
Empty Winchesters	38
Extra muffles	8
Extra muffle doors	6
" supports	7
" plugs	20
" back stops	9
Scorifiers (4")	9
" ($2\frac{1}{4}$")	62

(Signed.) J. B. FARQUHAR,
Chief Assayer.

FIELD WORK

PRELIMINARY REPORTS

PRELIMINARY REPORT ON THE TUNGSTEN ORES OF CANADA.

T. L. Walker, M.A., Ph.D.

In accordance with instructions received from you, I have, during the past six months, devoted myself to an investigation of the occurrence in Canada of ores of tungsten, with a view at an early date of making a report to you on this subject.

As is well known, the demand for tungsten for the manufacture of tungsten steel has caused a general search in recent years in various parts of the world for deposits yielding these ores. The production has rapidly increased, but has not kept pace with the demand, as indicated by the general rise in prices. Eighteen months ago, before the depression in the steel industry, tungsten ores carrying 60 per cent of tungsten acid were worth $11 per unit or $770 a ton for 70 per cent ore. The present world production of these ores is about 4,000 tons per annum.

It seemed strange that, while the many States of the American republic were steady producers, no record was available of the production of even a ton from Canadian territory. Ores of tungsten had been reported from several parts of Canada, but they were known only as mineral curiosities.

With a view to determining the distribution of tungsten ores in Canada, and in order to stimulate interest on the part of mining men and prospectors, I was requested to examine the known tungsten regions, also regions which, from their geological characteristics and mineral associations, gave promise as possible producers of these ores.

During the summer I accordingly visited all the known Canadian tungsten localities, with the exception of the Yukon, also most of the regions which produce gold from quartz veins or placer deposits. It is well known that in the United States there is a close parallelism between the distribution of tungsten and gold ores. In several of the old gold mining regions tungsten minerals were discovered. In some instances the tungsten values are by-products in the gold mining, in others the tungsten industry is now the more important.

The three known localities for these ores in Nova Scotia—Northeast Margaree, Cape Breton; New Ross in Lunenburg county; and Malaga Mines in Queens county—were visited. Samples of concentrates were collected from numerous gold mines with a view to chemical examination. At Moose River mines, Halifax county, I was shown some fragments of tungsten which had been broken from a boulder by some of the miners while out hunting. This mineral usually occurs as a decomposition product from wolframite or scheelite—the chief tungsten ores—and consequently the determination of tungsten meant a very strong probability of finding these ores in the vicinity. As soon as the nature of the mineral was known an active search was undertaken by these gentlemen, which was happily crowned with success. They located half a dozen quartz veins carrying scheelite about two miles west of the Moose River mines. Later in the season I again visited this region, and had an opportunity of studying the nature and extent of the deposits, which certainly promise considerable economic value.

The region around Murphys brook near Northeast Margaree, is well worth careful prospecting: the quartz veins which traverse the granite and altered slate should be closely examined for tungsten minerals.

In Beauce county, in the province of Quebec, the occurrence of scheelite was reported by Mr. Ferrier of the Geological Survey staff, in 1890. This is a region where argentiferous galena was found in quartz veins, and, in the gangue, scheelite was a frequent constituent. No mining had been done for many years, and little was to be observed.

In the Kootenay district, B.C., the ores of several of the gold quartz mines carry tungsten minerals, but the tungsten values have never been saved. This is true of the Kootenay Belle and Queen mines, near Salmo; the Granite-Poorman, five miles west of Nelson; and the Meteor mine on Springer creek, Slocan district.

The well known deposit of scheelite on Hardscrabble creek near Barkerville, Cariboo district, was visited. No work has been done there for years, and it was not possible to examine the underground workings. From the geological conditions, and from the appearance of the ore which I examined, this seems to be a probable producer. At present, owing to its being nearly 300 miles from the nearest railway station —Ashcroft, the cost of mining and shipping is bound to be exceedingly high, and it may well be doubted whether this property can be operated until better transportation facilities are provided. Scheelite was discovered in the heavy gravel and sands of several of the gold placer mines in the Cariboo district.

I accordance with your instructions I returned home through the United States in order to examine on the way the tungsten deposits in Boulder county, Colorado, and to study the methods employed in the concentration of the ore.

The information gathered as to the nature of the Canadian deposits, along with a general statement regarding the production prices and concentration of tungsten ores is being embodied in a report which I hope to be able to forward to you at an early date.

PRELIMINARY REPORT ON CHROME IRON ORES, AND ASBESTOS IN THE PROVINCE OF QUEBEC.

Fritz Cirkel, M.E.

I beg to submit herewith, a preliminary report of work done by me during the season 1907-8.

CHROME IRON ORES.

Having already visited in 1907 a number of chrome iron ore mines and prospects in the province of Quebec; with a view to writing a monograph on chrome iron ores, I continued this work in April, 1908. Nearly all the chrome iron ore deposits in the Eastern Townships were visited, the mills and mines inspected, and the mode of occurrence of this mineral closely studied.

The Monograph on Chrome Iron Ores was written during the months of May, June, July and August; a part of this time having been devoted to the gathering and preparation of data on the mines and metallurgical establishments of Ontario, for the general Report on the Mining and Metallurgical Industries of Canada, 1907-8, published December 31, 1908. A résumé of my work on the chrome iron ore resources may be given in the following words: The demand for Canadian chrome iron ores has steadily increased during the last four years; owing principally to the excellent quality now produced in the mines and mills, and also to the preference given by American buyers to the Canadian product on account of the proximity of the mines, and existing shipping facilities, compared with those of the New Caledonia resources.

In former years, while the presence of silica in the ores used for furnace linings—beyond a 4 per cent limit—was objected to; at present ore is sold containing over 8 per cent, and sometimes 10 per cent; since it has been found that the excessive amount of silica is after all not so detrimental to the operation of a blast furnace as originally supposed. This has greatly stimulated the demand for the Canadian article; and it may be confidently expected that, with the exploitation of the still dormant chrome iron ore resources, the ever increasing demand for these ores by United States consumers will be met in the near future. As a matter of fact, for the last two years the demand has been greatly in excess of the supply; the immediate cause of this condition was the extensive development work—preparatory to exploitation—undertaken in the existing mines. New compartment shafts have been sunk—in one instance to a depth of 400 feet—for the purpose of tapping the great ore bodies: diamond borings have been undertaken, and adits driven. All this work was done for the purpose of creating a broader working face, and a greater number of working points; thus enabling the producers to increase their output or to regulate the latter according to demand. The Canadian production of chromite for 1907 had a value of $72,901, whereas the value of chromite produced in 1901 was only $25,444.

ASBESTOS.

For the purpose of writing a second edition of my Monograph on Asbestos issued in the year 1905, I devoted part of August, October, and November to the examination of the working asbestos mines, and more particularly to the study of the lateral extension of the Broughton Serpentine range, with a view of mapping the latter. This new Broughton Serpentine range has lately come into prominence by reason of the considerable development carried on in ranges III, IV, V, VI, VII and VIII of the township of Broughton by a number of corporations and private individuals. Before the year 1907, only two mines and mills were working in that district; to-day,

four are in operation, and before long two more establishments will be added to the list of producing mines. The Broughton Serpentine range commences in the third range, and traverses in southwesterly direction the township of Broughton as far as range XI. Its productive width varies from 100 to several hundred feet; the greatest width so far determined being on range VI, where it attains several hundred feet. Its total length is eight miles.

Since the last issue of the Monograph on Asbestos was written—1904, the industry has progressed as never before in its history: the production for 1904 being 35,479 tons valued at $1,199,919; whereas in 1907 the production amounted to 61,985 tons valued at $2,483,211, or an increase in production in three years of over 75 per cent, and in value 100 per cent. This unprecedented increase is due principally to the great demand during the last number of years from the United States and Europe. As a consequence thereof, the older establishments have largely increased their capacity, while new producers have been added to the list. In 1904 the total capacity of all the mills in the asbestos district was 3,500 tons of asbestos rock per day; at the present time about 6,000 tons of rock can be treated, and if all expectations are realized, several new milling plants now in course of construction will be added during the year 1909; which will mean a further increase of 1,000 tons per day, or a total capacity for all the mills of 7,000 tons. It is now acknowledged, that Canada supplies 90 per cent of the world's production of asbestos. In foreign countries new discoveries have been made from year to year, and great hopes as to the exploitation of these resources were entertained; but so far the asbestos market has been almost exclusively supplied by the Canadian mines. The future outlook of this comparatively young industry is indeed very encouraging, and as the deposits so far developed are mostly of large extent, showing practically an unlimited supply of the mineral, there seems to be no doubt that the capacity of the respective works can still gradually be enlarged in order to keep pace with the demand: prompted by the constantly increasing number of the commercial uses to which this important mineral is being applied.

SESSIONAL PAPER No. 26a

PRELIMINARY REPORT—SECOND SEASON—UPON IRON ORES OF NOVA SCOTIA.

Dr. J. E. Woodman.

Under final instructions from you dated May 22, 1908, field work was begun on May 27, in completion of the task assigned in 1906. The first break occurred with the return of the party on September 19, and thereafter shorter trips were taken whenever weather conditions permitted. On account of unavoidable delays the month of May—which it had been planned to spend entirely in the field—was almost resultless. Throughout the season Mr. F. H. MacLaren, B.Sc., was employed as first assistant; and Mr. G. B. McCunn acted as second assistant for one month; the large extent of country covered making this necessary. Additional temporary assistance was frequently employed, chiefly in the form of guides. In many instances owners, or interested parties, rendered voluntary service when examination of their properties was in progress.

The field work covered (1) the remainder of the iron ore occurrences—with the exception of part of Pictou county, and scattered localities elsewhere; (2) the major part of the season was consumed in a study of the metallurgical limestones of the province, as having a most important bearing upon the iron and steel problem in eastern Canada.

Such figures as are used below; analysis averages, distances, etc., are preliminary.

IRON ORES.

The iron-bearing zone of the Cobequids does not extend as a definite unit east of Debert river. Many small veins of ankerite and allied minerals may be found across Colchester county, and into western Pictou; but they are isolated, and of no commercial importance. Nowhere is there a zone of fracturing filled in a way like that of the Londonderry district.

At Kemptown, northeast of Truro, and on the south flank of the Cobequids, is a local shear zone in which occur vein deposits of 'bottle' and dense limonite, also red, and specular hematite. The total length of the fissuring is several miles; but the productive part appears to be confined to a mile at the west end, in Upper Kemptown. The wall-rock—a quartzite, has been slightly replaced; but for the most part the deposits are mere veins, and depend for their size upon the original open spaces. Hence it cannot be expected that there are very large bodies; although 'float' of very pure ore up to 3 feet in thickness has been found. There may be enough to contribute to existing furnaces with some profit, if the present wagon haul of several miles to the railway can be overcome. The best of the specular hematite near the Munro shaft, Upper Kemptown, runs as high as 68·62 Fe. An average of several samples of limonite with small amounts of hematite, taken from the western openings, is 57·69. It would, however, be impossible at present to ship ore of this high grade, since wall rock is too much intermixed.

The limonite contact pockets and the carbonate ores of Pictou county are still under observation. In the Devonian of Antigonish and Guysborough counties are many occurrences of specular hematite: specimens of which are of very high grade, hence have caused undue optimism on the part of interested parties. Most of these were examined, and almost without exception were found to be veins of small extent, and no promise. The Burns mine at Erinville, Guysborough county, is the only deposit that showed evidence of more than a very limited tonnage, a few thousand tons having been taken out at various times. Transportation to tidewater was too

expensive. The ore here is a very soft coarsely specular hematite of high grade, but containing an excess of sulphur. The body is in the form of a pocket, and the ore becomes lean and spathic toward the walls. A sample of the best obtainable on a large dump gave:—

Fe	67·88
Insol.	1·25
Phos.	0·018
Sul.	1·148

In Richmond county, Cape Breton, a large number of occurrences of hematite and limonite were investigated. A few showed magnetite. Some of the deposits are veins associated with the contacts of intrusive rocks; others are at unconformities between the Lower Carboniferous conglomerate and various pre-Cambrian formations; still others, as also in some parts of Cape Breton county, are in felsite. In all these the conditions are unfavourable to expectation of large quantities. In the conglomerate contact bodies there is in some places possibility of pockets of a few thousand tons, and it may pay to open up for shipment to existing smelters those situated close to transportation; but none are of such promise as to warrant placing a high selling valuation on the properties.

A few occurrences are interbedded hematites, little prospected; but having some promise, as in part of the Loch Lomond district. None are situated close to transportation at present. An interesting deposit is that of the Micmac mine, between Robertson and Soldier coves, a few miles southeast of St. Peters. It is a contact body of magnetite and hematite in limestone, lying at, and near the contact of, the Windsor series and the Devonian below. Since 1882 some little work has been done on these prospects. The sulphur and phosphorus are high; but this contact is well worth exploring for a mile to the east across the Indian reserve. An average of all the samples available to date gives:—

Fe	44·74
Insol.	7·80
Phos.	0·625
Sul.	0·726

The veins in felsite, mentioned above, may be typified by those south of Arichat, Richmond county, and those at Gabarus, Cape Breton county: the mineral being usually specular hematite. It should be unnecessary to say that there can be no hope for workable bodies under such conditions.

In various parts of Cape Breton county, notably along the range of the Boisdale hills, are deposits of hematite similar to the magnetite of Barachois, previously described (Report of the Superintendent of Mines, 1906, pp. 30-31). At the Curry property—halfway between East bay and Boisdale—is a pocket of this type, locally long known as the Mosely mine. Its longest axis is northeast, parallel to the strike of the crystalline limestone in which it lies. The ore is of good grade, but the tonnage is limited. Slight traces can be found northeastward for some distance, but for the most part the replacement has been too incomplete to give a high iron content. At the Campbell farm, three miles to the northeast and on the strike of the Curry ore, an impure replacement of limestone and quartzite gave 42·51 Fe. A general sample of the large dump at the Curry mine gave:—

Fe	56·790
Insol.	12·750
Phos.	0·008
Sul.	0·022

Along the south side of the Coxheath hills, and only a few miles west of Sydney, are a number of untested contact deposits of limonite, lying at the base of the Lower Carboniferous limestone and against the pre-Cambrian. The location of these is favourable to cheap mining and transportation, as they are of easy access to the Sydney furnaces; and well worth exploration. A general sample of one-half ton from one pocket gave:—

Fe	54·700
Insol	6·980
Phos	0·092
Sul	0·013

By far the largest district investigated during the season is the Mira field, in southern Cape Breton county. This lies on the east side of the Mira river, and extends from near the Roman Catholic church at Grand Mira, south, to below Marion Bridge on the northeast—a distance of eight or nine miles. The field has long been known, and in parts a considerable amount of surface exploration has been made—enough, at all events, to indicate quite definitely the characteristics and value of the deposit. The ore varies from a black magnetite to magnetic hematite, and thence to a non-magnetic phase. It is interbedded in quartzites and slates, and in many ways bears a close resemblance to the Arisaig ore. Several belts are uncovered, also more lines of partial replacement; and the mineralized zone can be traced, with perhaps a slight interruption by faulting, over the entire distance mentioned.

The largest amount of work has been done on the northeast end near Marion Bridge by the Dominion Iron and Steel Company, and on the south by the Nova Scotia Steel and Coal Company. The latter shows ore mixed with alternate bands of slate and quartzite up to several feet in width; but in no case does an ore band exceed two feet. The ore often grades into rock insensibly, becoming siliceous outward from the centre of the band. At Marion Bridge there is a tradition of a drift boulder showing 3 feet of hematite clear of rock, and much of the exploration evidently was based upon that theory. But no evidence could be secured of more than a few inches of clear ore.

The most marked peculiarity of the iron throughout the field is the discontinuity of the bands. Not only do they pass transversely into rock by insensible gradations, but they die out completely along both strike and dip, in many cases reappearing again within a few inches or feet as occupants of the same rock horizon. The evidence indicates incomplete replacement of siliceous strata by iron oxides. These occurrences are the best illustrations yet seen by the writer, which are of service in working out the genesis of the bedded or Clinton type of ores. From an economic point of view, however, the district is a disappointment, as the replacement is everywhere too incomplete to provide workable ore at anything like the present price of iron, in a field which for many years has been regarded as an important prospect. This is the more disappointing since the type is one from which much is usually expected, and the analyses made indicate an ore comparing favourably with any other bedded occurrences. The district is at all points very accessible to Sydney. The best ore, in which replacement was complete, gives over 60 per cent Fe; less than 10 per cent insoluble; a moderate amount of phosphorus (for a bedded ore); and a negligible quantity of sulphur.

The work of the season, then, may be summarized as regards iron ore by the statement that, no indications of large ore bodies were found; only a few which may upon proper exploration prove of value as contributors to smelters which are not obliged to depend upon them for their chief source of supply.

METALLURGICAL LIMESTONES.

The metallurgical limestones of Nova Scotia were examined in only a few localities during the previous investigation; but a considerable part of the season of 1908 was spent in studying them. They occur in so many, and such widely separated places that, full justice could not be done them except by at least one complete season of work.

GEOLOGICAL DISTRIBUTION.

While most of the great work systems represented in the province contain limestone horizons, those which are pure enough for furnace use occur chiefly in the pre-Cambrian (George River series) and the Lower Carboniferous (Windsor series). The former is limited to the island of Cape Breton, and contains both magnesian and non-magnesian varieties. In the Carboniferous limestones the magnesia is usually very low. In a few places it rises to a percentage approaching that in some of the pre-Cambrian magnesian limestones, but the rock never becomes a true dolomite.

PRE-CAMBRIAN LIMESTONES AND DOLOMITES.

Having regard to availability of situation, the most important district is that of North mountain, on the north side of St. George channel and south of Denys river. It embraces a zone one and a quarter miles broad and at least ten miles long: in one place being connected with another extensive zone on the Denys River side of the mountain. Much of it is close to deep water at the lake front, and all within feasible tramming distance. The limestone occurs in a series of irregular bands which vary greatly in breadth. The front or south band contains the Marble Mountain quarries of the Dominion Iron and Steel Company and the Bras d'Or Lime Company; the former shipping to the Sydney furnaces during the open season a maximum of 20,000 tons per week. It is a very long zone of sediments; but the workable limestone portions are the shortest of the three. Parts are dolomitic, in some cases individual strata being thus characterized, in others the magnesia being very local and erratic in distribution. The chemical irregularity mentioned above is characteristic of the pre-Cambrian limestones everywhere, as is well shown at St. John, N.B., also at New Campbellton. The rock is completely crystalline, and while in places certain strata are even in texture, in others the grain changes rapidly from fine to coarse. The same may be said as to colour: it may, or may not be, characteristic of certain strata, its changes may be sudden or gradual, and may, or may not be, connected with structure. Thus in the main quarry at Marble mountain, where stratification is absent in places, the colour changes erratically from white to gray, dark blue to pink. So far as can be learned, the chemical quality is not a function of either texture or colour, or a combination of these. The insoluble matter of this band runs as low as 0·82, per cent and as high as 4·66 per cent in the main quarry, an average of six samples giving 2·63 per cent. This zone extends altogether from the extreme northeast end of the range for 7·5 miles, its westerly extremity being west of Lime Hill. The limestones become siliceous west of Marble mountain, and are soon replaced largely by other sediments.

The second zone begins at the east on the 'Squire McDonald' property, one and a half mile east of Marble mountain, and approximately three-quarters of a mile from the shore. It varies greatly in breadth: from a few yards to hundreds, and extends west to a brook near Lime Hill church—a distance of nearly six miles, gradually approaching the shore, so that where last seen at the west it is but half a mile back. Like all the limestones of this district, its stratification is rarely distinct. The magnesia content is variable, but always low; the silica runs from 0·64 to 5·26 per cent—averaging 3·20 per cent.

A third band lies at a maximum distance of one mile from the shore, and like the other is variable in breadth. Its length corresponds closely to that of the middle

zone. The silica runs from 1 20 per cent up, averaging about 4·20 per cent. Magnesia is generally low. South of the middle band described above, a few yards distant, and on the west side of a farm locally known as the McRae grant, is an isolated patch of dolomite approximately 450 by 250 feet, surrounded by granite. Its insoluble matter averages only 0·88 per cent and its magnesia ($MgCO_3$) is 42·12 per cent. Thus it is an almost pure dolomite.

From the old Morrison quarry at Lime Hill, lying one-quarter of a mile back from the shore, a band of dark blue limestone of great purity runs westward obliquely across the mountain for nearly three miles to the Denys River side. In places it attains a breadth of several hundred yards. At its eastern end, and until it plunges into the mountain it averages 1·58 per cent silica, becoming quite impure in places farther west. Its convenient situation makes it an unusually good shipping proposition. The Morrison quarry has a back-wall of fine trap, and a very few thin dikes cut the limestone at Marble mountain; but as a whole this region is remarkably free from basic intrusions, especially when contrasted with St. John, N.B.

West of this band, near the head of the channel, at West Bay marshes, various linear deposits were found. Several gave very excellent analytical results. The total amount of limestone, magnesian and non-magnesian in the North Mountain range is very great, and much of it is of a high degree of purity. The highest altitude reached by the limestone outcrops of the district is approximately 670 feet, while the middle and north ranges are over 600 feet, except at the west end at Lime Hill. Owing to the fact that the pre-Cambrian sediments are almost everywhere surrounded and invaded by granites, it is impossible to tell how deep the limestone goes, or the attitude of its igneous contacts in general. Outcrops show the granite locally underlying the former rock in one place, but distinctly overlying it in another. For the most part, the contacts as exposed, are vertical; hence it is fair to presume, since the present surface of the ground is a temporary and accidental erosion surface and as the limestone outcrops now extend from sea-level to at least 670 feet, that as a whole, any limestone band will be found to reach fully as deep as quarrying operations are feasible.

Three features connected with prospecting for limestone may be of interest. (1) The relation between the forest growth and bed-rock. It was found in the North Mountain field that in first or virgin growth the limestone is covered almost entirely with hardwood, while the granite is protected by evergreens to a great extent. Whether this can be used as a guide in other similar regions could not be determined, since most of the limestones of the province are on second growth land or are so remote from transportation that they were not visited. (2) That outcrops of all varieties and ages of limestones tend to assume a bouldery aspect on account of the method of weathering; and it often happens that a few detached boulders of limestone are as reliable for tracing a formation as detached bed-rock outcrops of a less soluble rock would be. (3) A most satisfactory method was discovered for distinguishing dolomite from limestone in the field: namely, the roughness of the weathered surfaces of the former. Indeeed, small amounts of magnesia very locally distributed often suffice to bring out the contrast in surface between pure and magnesian phases in the same ledge. The dolomite when coarse weathers so rough as to look superficially like a fine granite. When the weathering becomes extreme the calcite dissolves out completely at the surface, and the rhombohedrons of pure dolomite disintegrate from the face of the rock, forming a coarse gravel.

A second important area is that of New Campbellton, at the mouth of the Great Bras d'Or. Here a narrow band of crystalline limestone, in part dolomitic, lies between the granites of St. Anne mountain and the Carboniferous on the east; and in one place a dolomite quarry has been opened scarcely 250 yards from the slope of a coal mine. The aggregate quantity of available limestone is regarded as being many millions of tons in a total length of less than 3·5 miles, although the district is but a fraction of the size of the North Mountain field. The silica varies widely, from

0·50 to quite unworkable amounts. The dolomite is very local, but there is a large body entirely surrounded by limestone, opposite an old slope at the end of the coal tram line northward from Kelly cove.

The Boisdale hills, which furnished the Barachois magnetite, have a large amount of crystalline limestone and dolomite, and these have been extensively worked at the northeast end, on George river, by the two steel companies. At this point the rock is very variable in silica, frequently becoming almost pure serpentine; hence, except for certain narrow bands, has been abandoned. Limestones are found intermittently for sixteen miles, to the north side of East bay at MacIntosh brook, nearly as far west as Eskasoni. For the most part, except for a mile at the northeast end, they lie on the top of the mountain, and are less accessible to transportation than some others. In many places the quality of the stone is excellent; in others the silica is high. At Eskasoni a wedge-shaped band of limestone starts northeast from the shore at the east end of the Indian reserve, and runs obliquely up the mountain for 2·5 miles. In parts its quality is good, and it is close to shipment, although the water is not deep. The silica is high near the shore; farther inland it averages 3·30 per cent.

One mile west of the village of Whycocomagh, at the head of St. Patrick channel, is a promising deposit of coarse white dolomite of some magnitude, having less than one per cent silica, and 42·00 per cent magnesia. It could be quarried and delivered at the wharf at Whycocomagh very cheaply.

As it is impossible in a summary report even to mention all the deposits, the foregoing are given as typical examples.

In view of the possibility of smelting operations in the western part of the province, special mention must be made of the limestone of St. John, N.B., from which shipments are even now being made to the furnaces at Sydney. In, and near the city are, apparently, two zones of the so-called George River series, which at the northeast merge, and extend for many miles. They are much more profusely intruded by basic rocks than in Cape Breton, and the dikes interfere in places with the quarry work, even making the rock unsaleable. Nevertheless an extensive business is carried on by a number of firms, in 'pulp lime' (dolomite) and 'plaster lime' (ordinary limestone). The rock is for the most part distinctly stratified, fine-textured, and inclining to dark colours. While varying in composition it is of great purity in most of the places worked, and doubtless is equally good in the still greater territory which has not yet been touched. Thus at Drury cove, north of the city, an average of three samples by the writer gave 1·68 per cent insoluble matter. In the quarries of Stetson and Cutler the silica ranges from 0·70 to 2·75 per cent. A dolomite quarry gave 0·56 per cent silica; but the composition in this quarry is variable. Other properties east of the St. John river averaged 0·69, which is remarkably low for an area of several miles. West of the river, and on an extension of the same strata is very pure lime, both ordinary and magnesian. A sample analysed by the author, gave:—

	Per cent.
$CaCO_3$	55·26
$MgCO_3$	41·55
SiO_2	0·50

At Green head—the northernmost land west of the river on which the rock outcrops, and in a range west from the Drury Cove quarries—an average of 2·00 per cent silica was found.

The quantity of good limestone in the St. John district is enormous, its situation with reference to transportation is good, and the field is capable of supplying not only western Nova Scotian smelters, but eastern ones as well.

CARBONIFEROUS LIMESTONES.

These differ from the pre-Cambrian in being always distinctly stratified and relatively thin. Workable deposits are confined to the Windsor series—as far as now known. Often of a high degree of purity, they present difficulties in furnace practice because of the different composition of adjacent beds, so that a horizon of, say, 15 feet thick may give several silica proportions in various parts of its cross-section. While all the strata may be usable, and a general mixture excellent, it is difficult to avoid high variability in the shipments, and hence in the furnace charges. A second cause of uncertainty is the thickness of the deposits. Thus, where the dip is low a large area must be stripped; where high, a depth below ground-water level is quickly reached in quarrying. A third difficulty sometimes encountered is, the tendency of the rock—downward, to become siliceous; turning rather suddenly into a sandstone or grit. A large number of deposits, however, are of sufficient size and purity to supply a single furnace, or for mixing with pre-Cambrian rock for large plants.

The distribution of the limestone is very wide, practically co-extensive with that of the Windsor series, although but a small part of the area is occupied by this rock. The series also contains a vast amount of gypsum; and in some deposits—as between Iona and Little Narrows, C.B.—the two occur in juxtaposition. In appearance the rock is usually gray, sometimes dense and flinty, sometimes less dense, and full of small cavities, sometimes composed almost entirely of shell fossils. Much of it gives out a more or less fetid odour when struck.

Beginning at the west there are many occurrences in Hants county; but most of them too thin, too erratic in composition, too low in topography, or too far from transportation. With the opening up of smelting operations at Annapolis or Parrsboro they might in some cases be available; but for this purpose, so large in quantity and excellent in quality is the limestone to be had from St. John, that it is doubtful whether they could withstand the competition.

In Colchester county are a number of small deposits near the Intercolonial railway, which could be employed in any smelter situated on that line, as at Londonderry. They are often very pure, like that long worked at the McDonald quarry, Lanark: a sample of the refuse from which gave 3·40 per cent silica. A small quarry one mile west of Brookfield station gave 0·30 per cent silica. At Anthony's Nose, on the Shubenacadie river, and within reach of the Midland division of the Dominion Atlantic railway, the rock runs 2·30 per cent silica, but has 5·60 per cent of iron and alumina.

The ankerite fluxes of the Londonderry district have already been dealt with (Vol. 1 of the iron report). Eastward to Pictou county there is little along the railway line. The limestones south of New Glasgow are still under observation. At and near Antigonish are several deposits of good grade. All the occurrences on the mainland, however, suffer the disability of expensive rail transportation.

In the island of Cape Breton are many good deposits. Small ones are situated along the Sydney and Louisburg railway at Catalone lake; analyses of three of which gave, respectively, 4·00, 2·00 and 0·86 per cent of silica. The Sydney district is dotted with local deposits. The most extensive is that operated by the Nova Scotia Steel and Coal Company at Point Edward, opposite Sydney. It extends from the shore of Northeast Arm, southeast and south to South Arm opposite the city—a distance of four miles. It is, or has been worked in three quarries, located about halfway across the peninsula. The rock here dips northeast at a very low angle, necessitating wide stripping. The horizon is 12 to 15 feet thick at the quarries, and consists of at least three strata, differing chemically, and stripped in separate bunches. Samples gave 5·60 per cent silica in the lower bench, 3·38 per cent in the middle, and 1·50 per cent in the upper; but furnace charges averaged only 1·60 per cent for fifteen days

in March, 1907. At George river, west of the pre-Cambrian quarries, two openings are now supplying Carboniferous limestone to the Dominion Iron and Steel Company. A combined sample of the two gave silica 1·04 per cent.

Part of the New Campbellton district contains good Carboniferous limestone. A large cliff of shell rock at the northern end of the field gives 0·48 per cent silica. The main limestone hill, lying one-half mile north of Kelly cove, and made of massive rock, averages 3·87 per cent of silica. It is admirably situated for cheap handling, and contains a large body of rock.

The north side of the Bras d'Or lakes has—in a few places—much lowland limestone: as between Little Narrows and Iona; but too impure, or too remote, or low, for operation. On the south side, however, are several important deposits. At Morley brook, south of the village of East Bay, a large and accessible body lies in the form of a shallow syncline. Its northern edge is 1·75 miles south of the line which will be taken by the St. Peters-Sydney railway when built. An average of the samples taken, exclusive of those close to the lower contact, gives only 2·72 per cent silica.

Westward along the lake front, and directly on the line of the proposed railway, are several smaller deposits. One of these, east of Ben Eoin, averages 0·28 per cent silica, over its full breadth. A shell limestone at Irish cove, extending for a length of half a mile, gave 0·76 per cent insoluble; and at and near the settlement of Red Islands a belt of shell limestone gave in one sample 2·44 per cent. Shipment averages quoted by the Nova Scotia Steel Company, which controls the deposit, are 0·90 per cent for two shipments. The band averages 30 to 50 feet in thickness; and although not high above the water over most of its exposure, gives a large tonnage on account of the great length of outcrop.

Taking into account all the limestone and dolomite of Cape Breton which may be usable in furnace practice, the total is almost beyond calculation. It has been estimated by one of the most competent engineers engaged in the development of metallurgical limestones in eastern Canada that, one-twentieth of the total occurrences may be good; the remainder too poor, or variable, or too remote. Some very large deposits known to be of great extent, and of high quality have not been examined during this investigation, merely because they were too far inland.

But even deducting the unsaleable portion, Nova Scotia, and especially Cape Breton island, has a great asset in these limestones, which are of such quality as to be suitable for pulp clarifying, land plaster, cement, or furnace use as the case may be. And it is not unlikely that it would materially benefit the province if some of the attention concentrated, and money expended hitherto, in fruitless attempts to build up large enterprises in certain other mineral resources, were diverted to the further exploitation and development of the limestone and gypsum industries.

INVESTIGATION OF IRON ORE DEPOSITS IN NEW BRUNSWICK AND NORTHWESTERN ONTARIO.

Einar Lindeman, M.E.

In accordance with your instructions, I visited—during the first part of the summer—some iron ore claims in the counties of Northumberland and Gloucester, New Brunswick; and on July 28, left Ottawa for Port Arthur, Ont., in order to investigate some reported occurrences of iron ore alongside the Port Arthur and Duluth railway; closing the season's field work by examining some alleged iron ore deposits near Mokamon station—Canadian Northern railway—twenty-five miles west of Port Arthur, Ont.

IRON ORE CLAIMS ON NORTHWEST MIRAMICHI RIVER, NORTHUMBERLAND AND GLOUCESTER COUNTIES, NEW BRUNSWICK.

In the hope of finding commercial iron ore deposits, a large area of land has been taken up in the counties of Northumberland and Gloucester, N.B., by a syndicate represented by Mr. James Ferguson, of Newcastle. The land is held under what the Provincial Mining Act calls 'license to search,' and includes an area of about thirty-five square miles, situated on the northwest Miramichi river and its tributaries; Little river; Tomogonops river; West brook; Portage river; and also on the headwaters of Gordon brook—a tributary of Nipisiguit river.

GENERAL GEOLOGY.

In general the formation is well covered by glacial debris, and densely wooded. Few natural exposures are to be found, except in some of the rivers and creeks, where the covering of drift has been cut through by the streams. The prevailing rocks of the district are gray quartzites and reddish and gray slates, which in places become schistose with irregular veins of quartz. Occasionally these schistose rocks contain iron pyrites, which gives them a rusty appearance.

PROBABLE VALUE OF THE REGION.

A few years ago a discovery of several magnetite deposits was made at Austin brook, a tributary of Nipisiguit river, and situated about two miles northeast of the area under consideration. These deposits, occurring in a mica schist, have—by a magnetometric survey, and diamond drilling—been proved to contain a large tonnage of ore. The successful development of the Austin Brook property has undoubtedly stimulated the speculative buying-up of practically all the surrounding land; and although no discovery of commercial importance has so far been made by the prospectors on these newly acquired lands, the fact that, the geological formation is very similar to that of Austin brook warrants the probability that, by close and systematic prospecting deposits of iron ore may be found there. The vast area, the difficulties of travel, and the drift-covering, all combine to make prospecting a difficult matter, and may explain why the search is not further advanced.

ELLIS IRON CLAIM.

This claim is situated about four miles west of St. Rosette, which is about nine miles north of Bathurst, Gloucester county, N.B. Along the flank of a ridge running about east and west, several outcrops of magnetite occur in an altered siliceous schist. By means of these outcrops and the magnetic attraction, the ore formation can be traced for about 950 feet along the ridge. Several open-cuts and a tunnel have been

made into the hill, showing the width of the ore formation to be from 4 to 14 feet. While high-grade magnetite can be picked in places, the ore, as a rule, is interstratified with the same siliceous material forming the walls. Four average samples taken in different places across the ore body give the following analysis:—

	I.	II.	III.	IV.
Insoluble matter	58·6	21·000	27·7	28·900
Iron	19·2	48·200	45·2	48·400
Sulphur	....	0·819	....	0·231
Phosphorus	....	0·036	....	0·023

These analyses show—as might be expected from the admixture of the country rocks—that the iron content is rather too low for the utilization of the ore in its natural state. By magnetic concentration, however, the commercial value of the ore can undoubtedly be raised, since nothing in the composition of the ore seems to prevent this; but unless other discoveries are made, the limited quantity of ore in sight seems hardly to warrant this.

INVESTIGATION OF THE IRON ORE POSSIBILITIES ALONG THE LINE OF THE PORT ARTHUR AND DULUTH RAILWAY.

The area embraced in this investigation, is the country around the railway line of the Port Arthur and Duluth railway, from the International Boundary Line eastward to Whitefish lake, a distance of about thirty-three miles.

Economic Geology.

The great similarity of the iron-bearing rocks of the district with those of the Mesabi range has often stimulated the hope that, similar deposits existing in Minnesota, may also be found here. With the exception, however, of some enrichment of thin layers of magnetite interbanded with chert, no second concentration of the iron ore formation seems to have taken place, and so far no commercial ore deposits have been found. The same condition seems to exist on the eastern part of the Mesabi range where the eruptive greenstones also are numerous. It has been assumed that these eruptive magmas have metamorphosed the iron formation, and thereby caused the development of magnetites and amphiboles, and that these minerals having been able to resist the surface alteration have remained practically unaltered.

The weight which must be given to this assumption can only be ascertained after extended explorations. At Loon lake, about twenty-six miles east of Port Arthur, where eruptive greenstones are also intruding the Animikie iron-bearing rocks, considerable exploratory work has been done by test-pitting and diamond-drilling. The result of this work shows that the iron-bearing rocks here have been subject to a secondary concentration, and altered to hematite, although, as a rule, this is reported to be low grade.

CLAIMS T. B. 41; T. B. 42; AND T. B. 60 IN THE TOWNSHIP OF CONMEE, WESTERN ONTARIO.

Before leaving for Ottawa, the writer received instructions to visit the above-mentioned iron claims. They are located about a mile west of the Canadian Northern railway at Mokamon station in the township of Conmee, about twenty-five miles west of Port Arthur, Ont. A belt of interbanded jasper and siliceous magnetite outcrops on several places along a hill through all the claims. The strike of the rock is somewhat N.E.—S.W. with a steep dip. An average sample of the iron-bearing formation gave only 9·06 per cent iron. Owing to the large amount of siliceous matter present in the ore, and the low iron content, these claims have so far not proved to be of commercial importance.

PRELIMINARY REPORT ON A MAGNETIC SURVEY OF THE HURON MOUNTAIN, TIMAGAMI FOREST RESERVE.

B. F. Haanel, B.Sc.

In accordance with your instructions, I left Ottawa on August 8, 1908, for the Timagami Forest Reserve for the purpose of making a magnetic survey of the Huron Mountain mine. On account of the supposed similarity, geologically, of this iron ore occurrence to that of the Moose Mountain iron mine, this Branch was strongly urged to make this examination.

SITUATION.

Huron Mountain mine is situated on the northwest shore of Manitopipagi lake, approximately thirty-five miles southwest of Timagami station, which is situated on the northeast arm of Lake Timagami.

ROUTE TO PROPERTY.

To reach this property, it is necessary to take one of the regular steamers plying between Timagami station and Bear island, where is situated a Hudson's Bay Company's post. Here one can obtain all necessary camping outfits, canoes, guides, etc., From Bear island it is necessary to travel by canoe for a distance of seven miles in a southwestern direction on Lake Timagami, to a point on the mainland where there is a good portage of half a mile, which leads into a small lake. From the opposite shore of this lake another portage of about half a mile leads to Gull lake, a rather large lake. After crossing this lake, one long portage or two shorter ones, and crossing two small ponds, brings one to the east shore of Manitopipagi lake, on the opposite shore of which is situated the Huron Mountain mine.

TOPOGRAPHY OF PROPERTY.

This property comprises three lots: recorded claims T. R. 1346; T. R. 1347; and T. R. 1348. But the iron ore occurrences are confined almost entirely to a hill which is approximately 1,800 feet long by 700 feet wide. The highest point of this hill is 260 feet above the level of Manitopipagi lake. At its northwestern extremity the hill is precipitous, while on the south and southeast, north and northwest it is flanked by massive ledges of rock, which rise in both cases almost perpendicularly to a height of about 160 feet above the level of the lake.

TIMBER, WATER, ETC.

This property is well wooded with red and white pine, balsam, birch, and maple, and the water supply is abundant, there being in addition to Manitopipagi lake, which skirts the southwestern boundary of the property, a small lake within the property itself.

MAGNETIC SURVEY.

A base line was run in a northwest, southeast direction, starting at the shore of Manitopipagi lake. The entire base line, about 2,500 feet long, was divided into 60 ft. spaces, and cross lines run from these divisions. The cross lines, which in some instances were over 1,000 feet long, were divided into 30 ft. spaces, thus dividing the property to be surveyed into rectangles 60 by 30 feet. Observations were taken at the corners of all these rectangles, and at intermediate points whenever necessary.

LEVELS AND CONTOURS.

To facilitate the interpretation of the magnetic measurements, levels were taken at every peg on which a magnetic observation was taken, and these levels were then plotted as 10 ft. contours on the map of the vertical intensity. This was necessary on account of the uneven character of the ground.

GEOLOGY.

The iron ore occurs in the Keewatin iron formation, massive exposures of which flank both sides of the hill previously mentioned. Calcite and garnet are the most common accessory minerals associated with the iron ore. Calcite is also found in patches on both of the exposed ledges of the Keewatin formation. An intrusive sheet of greenstones cuts across the iron formation in a north-northwest and south-southeast direction. The maximum width of this intrusive sheet, as measured where exposed by trenching, is 170 feet. At the north-northwest this intrusive sheet terminates in a precipitous bluff, and could be traced for a few hundred feet in a south-southeast direction.

SAMPLES COLLECTED FOR ANALYSIS.

Forty samples of iron ore were collected for analysis, together with some representative rock specimens. The analysis of the samples of iron ore show the ore to be fairly high in iron and free from any deleterious ingredients.

MAP OF VERTICAL INTENSITY.

A map of the vertical intensity, and a layout showing the location of drill holes for proving the property were made on my return to Ottawa. Besides these two maps, two copies of the map of the vertical intensity were made for the owners, to enable them to properly develop their property.

DIAMOND DRILLING.

Since diamond drilling is now being prosecuted by a gang of sixty men, it seemed advisable to hold over the full report until the details of the drill cores could be obtained. I was, therefore, instructed to delay the full report until after examination of these drill cores, which are expected to be shipped to us early in the spring.

MAGNETITE DEPOSITS IN MAYO TOWNSHIP, HASTINGS COUNTY, ONTARIO.

By Howells Fréchette, M.Sc.

In accordance with your instructions I left Ottawa on August 9, to visit some of the iron ore deposits along the Central Ontario railway, in Hastings county, Ontario.

The summer was devoted to examining deposits in Mayo township, near Bessemer and Hermon, and making magnetometric surveys of a number of them.

The Bessemer deposits were discovered in 1898, but no ore was shipped until 1903. At that time the ore had to be hauled by team to L'Amable station, a distance of about five miles. In 1906, a railway was built from a point on the Central Ontario railway near L'Amable to Bessemer, under the charter of the Bessemer and Barry's Bay railway, making it possible to ship on a larger scale, and at a lower cost.

The deposits at Bessemer are owned by the Mineral Range Iron Mining Company, Limited, and were operated by them until the beginning of 1908, when certain mines were taken over, on a royalty basis, by the Canada Iron Furnace Company, Limited, under a fifteen year lease.

During the past year this Company operated two mines, known as No. 3 and No. 4. No. 3 was only worked for a short period, while No. 4 was in operation steadily until the middle of November, when it was closed for the winter. No. 4 shipped, on an average, about 125 short tons of ore per day, to the Company's blast furnace at Midland, Ontario.

GENERAL.

The ore deposits in the district visited are all magnetites and are situated in a belt of amphibolites, which has a general strike about northeast and southwest, as shown on the Bancroft Map, No. 770, of the Geological Survey, by Drs. Adams and Barlow.

The ore zone roughly follows this strike, and was traced from lot 1, concession VI, to lot 12, concession IX, in Mayo township, a distance of about four miles.

In this report the deposits will be dealt with in order from southwest to northeast, though the following reservation is made: between the deposits known as No. 4 and the Child, no systematic search was made for iron, owing to the lack of time; therefore, it must not be inferred that the single deposit mentioned in this interval is the only one.

No. 1.

A magnetometric survey was made on the north half of lot 1, concession VI. This survey indicates the presence of a number of very small pockets of magnetite, one of which has been opened and a small quantity of ore removed. This pit is known as No. 1. The ore is badly intermixed with rock and is cut by a dike.

Forty-five feet to the east of this opening there is a larger deposit, running east and west, 250 feet long with an average width of about 30 feet. No sample of this ore could be taken as it is completely covered with soil and broken rock.

The following analysis is from a picked sample taken in No. 1 pit and would indicate what might be expected in the larger deposit:—

	Per cent.
Insoluble matter	29·92
Iron	49·41
Phosphorus	0·027
Sulphur	0·004

The country rock is amphibolite changing to hornblende schist in the neighbourhood of the ore.

No. 2 and No. 3.

In several places alongside the railway, outcroppings of magnetite are found on lots 2 and 3, concession VI.

No. 2.—On lot 2 an opening, known as No. 2, has been made, a short distance north of the railway, from which 1,500 tons of ore have been shipped. The ore in this pit is much intermixed with rock, making culling expensive and wasteful.

Owing to the irregular shape and the condition of the pit it was impossible to get an average sample of the ore. A picked sample was taken and gives the following analysis:—

	Per cent.
Insoluble matter	15·36
Iron	52·46
Phosphorus	0·004
Sulphur	0·006

No. 3.—About 1,300 feet east of No. 2, two pits have been opened on the south side of the railway, which are, together, known as No. 3 mine. From these pits a considerable quantity of ore has been shipped. As in the case of No. 1 and No. 2 the ore contains a large proportion of rock, though not to such a great extent. The ore, here, may be easily hand picked; as the rock is well defined from it. The ore dips at about 70° to the south, having a hanging wall of mica schist. The included rock is principally fine grained quartzite, and some calcite. The foot-wall was not uncovered, but a few hundred feet to the northwest a mass of crystalline limestone is cut through by the railway.

The following analysis is from an average sample taken across the body in No. 3 West:—

	Per cent.
Insoluble matter	20·82
Iron	49·33
Phosphorus	0·002
Sulphur	0·059

The following analysis is from a picked sample from No. 3 West, showing the grade of the shipping ore:—

	Per cent.
Insoluble matter	10·92
Iron	59·56
Phosphorus	0·007
Sulphur	0·06

A magnetometric survey was made extending from 150 feet west of No. 2, to 450 feet east of No. 3 East, a distance of 2,010 feet.

This survey indicates that No. 2 has been opened on a small pocket. It also shows the presence of a larger deposit of ore 100 feet north of the railway and 300 feet east of No. 2. It is about 120 feet long and 50 feet wide. Nothing can be said as to the grade of this ore, as no sample could be got. There is another deposit about 100 feet long and from 10 to 30 feet wide, 600 feet east of No. 2 and 150 feet north of the track.

On the south side of the railway the only ore of any consequence is that in which No. 3 is sunk. Here there are two deposits: the east pit in one and the west pit in the other. They are separated by about 50 feet of rock in which are small patches of ore.

The west deposit is about 120 feet long and 60 feet wide at the widest point, and the east deposit is about 150 by 120 feet. Besides these two deposits there are a few small pockets, on a line extending east and west through these two main deposits.

No. 4.

No. 4—the principal deposit at Bessemer—is situated on lot 4, concession VI. Its eastern extremity is about 500 feet from a small lake, under which it extends for some distance.

The ore is a close grained magnetite, fairly free from intermixed rock, and lies between clearly defined walls. The deposit is from 40 to 60 feet wide, and dips 65° to the south. Several core drill holes have been sunk on this body; but unfortunately, the logs are not available for this report.

The following analysis is from a sample taken across the face of the open-cut at the time the mine was closed for the season:—

	Per cent.
Insoluble matter	12·01
Iron	57·76
Manganese	4·26
Phosphorus	0·008
Sulphur	0·007

Average analysis of 25 carloads shipped to Midland, during 1908[1]:—

	Per cent.
Iron	54·0
Sulphur	0·075
Phosphorus	0·022

The main part of the ore removed has been from open-cut workings. At the west end of the open-cut, which is about 260 feet long, 60 feet wide and 40 feet deep, a shaft has been sunk with a level at 60 feet. From the east end of this level a raise was driven to the open-cut and a new working face, about 25 feet high, was developed.

The ore is hoisted from the 60 foot level, and dumped into the crusher hopper. From the crusher it is delivered direct to the railway cars. The ore is culled in the mine and again in the cars. In this way the sulphur content can be kept down, as the pyrites, from which it comes, occurs in well developed streaks and masses of sufficient size to make culling easy.

LOT 9, CONCESSION VII.

On the north side of the surveyed line for the proposed extension of the Bessemer and Barry's Bay railway, on lot 9, concession VII, about one mile from No. 4 mine, there is a deposit of magnetite, of which no detailed survey was made; but readings taken with the dip needle indicate that the body is about 100 feet long and but little over 15 feet at its greatest width, and hardly likely to be of great depth. No outcrop was found, so the grade of the ore is not known. There are other small patches of ore in this vicinity, but none of sufficient size to be of commercial interest were observed.

CHILD AND RANKIN PROPERTIES.

A magnetometric survey was made on lots 10, 11 and 12, concession IX, extending over onto lots 11 and 12, concession VIII. Lot 10, concession IX, is owned by Wm. Rankin, and lots 11 and 12, concession IX—known as the Child property—are owned by the Mineral Range Iron Co., Ltd. The Canada Iron Furnace Co., Ltd., by the terms of their Bessemer lease, hold the option on this property until the summer of 1909.

Child property.—Three openings have been made on the Child property, from which about 1,000 tons have been raised. The ore has not been shipped, but remains in

[1] Kindly furnished by Mr. George E. Drummond of the Canada Iron Furnace Company, Limited.

stock piles at the mine, awaiting better transportation facilities. The existing roads are very poor, being hilly and rough.

When the properties in this vicinity are opened and ready to ship regularly the Bessemer and Barry's Bay railway will be extended to them from Bessemer, a distance of two and a half miles. The line has been located and the right-of-way cleared.

The main deposit of the Child property runs northeast and southwest. It is of irregular shape, about 1,000 feet long and varying in width up to nearly 200 feet, in places. It dips to the southeast at a very steep angle.

The three openings which have been made on this body are along its foot-wall, where it outcrops from the hillside.

The ore, a coarse grained magnetite mixed with hornblende, is easily crushed and well adapted to magnetic concentration. An average sample taken from the two southernmost pits gives the following analysis:—

	Per cent.
Insoluble matter	33·46
Iron	40·61
Phosphorus	0·108
Sulphur	0·004

The following analysis is from an average sample of the stock pile at the north pit:—

	Per cent.
Insoluble matter	31·43
Iron	41·93
Phosphorus	0·038
Sulphur	0·005
Titanic acid	trace.

Extending in a line from the north end of the main deposit are two smaller deposits: the first one being about 125 feet by 40 feet, and the second 60 feet long and 30 feet at its maximum width. About 60 feet northeast of the main deposit are two deposits of workable size. One is about 110 by 60 feet and the other 75 by 60 feet.

There is a large area, about 450 feet to the northwest of the western portion of the main deposit, where uniform readings with the magnetometer of from 30° to 50° were observed. This would indicate the probability of a large deposit of a decidedly low grade magnetite. There is a heavy covering of sand and loam over this entire area, so that there was no exposure of ore. A pit had been started here, but owing to the running nature of the sand, and to water encountered, it was not carried deep enough to reach the ore.

At the western side of lot 11, concession IX, is a body of magnetite about 275 feet long by about 70 feet maximum width. This deposit extends over onto the Rankin property. About 120 feet of it is on the Child property, where it attains its maximum width; 66 feet on the road allowance and 90 feet on the Rankin property.

The *Rankin property*, owned by Wm. Rankin, Hermon, consists of lot 10, concession IX. Considerable surface work has been done, such as trenching and digging of test pits.

The main deposit is about 400 feet long × 130 feet wide. A number of test pits on this show ore of varying quality, from a high grade clean ore to a low grade ore containing considerable sulphur.

This low grade ore is on the north, or foot-wall of the deposit and seems to change gradually into amphibolite and bands of hornblende schist impregnated with magnetite. A sample from the low grade portion of this deposit taken in one of the trenches which cuts across the ore body, gives the following analysis:—

		Per cent.
Sample 1.	Insoluble matter	52·00
	Iron	28·11
	Phosphorus	0·167
	Sulphur	1·360

The following analysis is from an average sample across the main portion of the deposit taken from the same trench:—

		Per cent.
Sample 2.	Insoluble matter	37·72
	Iron	41·31
	Manganese	3·24
	Phosphorus	0·208
	Sulphur	0·430

There are portions of the deposit which would, undoubtedly, give much higher percentages of iron.

The trench from which the two foregoing samples were taken is 122 feet long. Sample No. 1 represents 22 feet at the north end of the trench, and sample No. 2 the remaining 100 feet.

To the east of the main deposit is another, about 270 feet long and up to 60 feet wide. It is quite likely that this deposit is connected to that indicated above by rock carrying magnetite disseminated through it, as is shown in a test pit about midway between them. No sample was taken from this body.

MAGNETIC CONCENTRATION.

In order to determine the suitability of these ores to magnetic concentration, experiments were made on the three having the lowest iron content.

It was attempted to crush the ore to about 40 mesh, but on sizing, it was found that about 50 per cent passed through the 100 mesh sieve. The ore was concentrated dry, by means of a very strong bar magnet. The concentrates and original ore were weighed and the percentage of concentrates from the ore was calculated.

ANALYSES OF ORE AND CONCENTRATES.

Ore.	Percentage of Concentrate.	Ore.			Concentrate.		
		Iron.	Phosphorus.	Sulphur.	Iron.	Phosphorus.	Sulphur.
Child (South pits)	60%	40·61	0·108	0·004	63·5	0·05	0·027
Rankin. Sample 1	40%	28·11	0·167	1·36	71·7	0·039	0·283
Rankin. Sample 2	60%	41·31	0·208	0·430	67·0	0·05	0·089

It will be noted that the phosphorus is much reduced in actual percentage and very greatly in its ratio to the iron. In two of the cases the sulphur is reduced, but in the third is increased; due, probably, to magnetic iron sulphide. If the concentration were followed by briquetting, such as in the Gröndal process, the sulphur would be further reduced.

As already mentioned, the ores in this locality are coarse grained and friable. The phosphorus exists probably as apatite, and may be partially eliminated in the process of magnetic concentration.

Although these ores are of too low a grade for direct reduction, they are very well suited to magnetic concentration and should furnish a high grade product at a comparatively low cost.

NOTES ON THE SMELTING OF TITANIFEROUS IRON ORES IN THE ELECTRIC FURNACE AT WELLAND, ONTARIO.

By B. F. Hannel, B.Sc.

Early in October, 1908, the Electro-Metals Company, Limited, of Welland, Ont., invited the Mines Branch of the Department of Mines to send a representative to Welland to witness the smelting of titaniferous iron ore in their electric furnace. I was, accordingly, instructed to proceed to Welland and report upon this experimental run.

The furnace used during these experiments was similar in construction and design to that employed at Sault Ste. Marie during the experiments carried on by the Dominion government in 1906, hence a description is unnecessary.

The ore—which was sent by the Union Pacific railway from their property in Wyoming—contained as high as 2 per cent titanic acid (TiO_2), and the object of the experimental run was to show that, an ore high in titanium could be successfully reduced in the electric furnace.

The principal figures relating to the run are as follows:—

Length of run (deducting stoppages)	22 hrs. 45 min.
Mean volts on furnace—	
High tension side	10,800
Low tension side	35·6
Mean amperes on high tension side	25·0
Power factor	0·91
Power used $\frac{10{,}800 \times 25 \times 0{\cdot}91}{746}$	329 h.p.
Pig iron obtained	3,317 lbs.

	Short tons.
Output of pig iron per 1,000 electrical horsepower days:	5·040
Electrical horsepower years per ton of pig iron =	0·543

The analyses of the iron ore, charcoal, lime, slag, and pig iron produced, have not yet been made by the chemists of the Mines Branch; but some analyses made in the laboratory of the Electro-Metals Co., Ltd., of Welland, show that with a charge containing 35 lbs. of lime, only a trace of iron was found in the slag, and that the iron content of the slag increases with the increase of lime.

In the runs containing 50 lbs. of lime, the amount of slag produced was very large. In future runs on this ore, however, the amount of lime per charge will be reduced to 25 lbs., which, it is calculated, will greatly reduce the amount of slag.

The lime was only reduced to 35 lbs. in runs subsequent to, or after my visit. The charges used during the run witnessed by me were as follows:—

10 charges.—	Iron ore	200 lbs.
	Charcoal	60 "
	Limestone	50 "
3 charges.—	Iron ore	200 "
	Charcoal	65 "
	Limestone	50 "
22 charges.—	Iron ore	200 "
	Charcoal	70 "
	Limestone	50 "

making a total of 35 charges.

Some analyses of the pig iron obtained showed only a trace of titanium.

The output in pig iron per 1,000 horsepower days for this run must not be considered as the best result that can be obtained, as the furnace during the first seven hours of the run operated very badly. To arrive at definite and reliable results as to output, the furnace should run continuously for at least three days.

On the completion of the analyses of the ore, lime, pig iron, etc., a full report will be prepared.

ON THE COLLECTION OF COAL SAMPLES FOR TESTING CANADIAN COALS AT McGILL UNIVERSITY.

Theophile C. Denis.

The greater part of the spring and summer of 1908 was devoted to the collection of coal samples for the series of tests of Canadian coals now being conducted at McGill University for the Department of Mines, to which reference was made in last year's Summary Report of the Mines Branch.

The same method of collecting samples was employed as during the previous season. The object being to obtain a 10 ton sample of coal under precisely the same conditions that it is put on the market from the various mines. Hence coal was taken in the ordinary course of operation of the mine—usually at the end of the picking belt. This method has the advantage of not interfering with the day's work of the colliery. The coal was obtained and sacked under my immediate supervision: tags and lead seals being affixed to each sack.

In some cases, when it was judged that the coal did not require washing, or in the case of the lignites on which coking tests were not conducted, smaller samples than the standard 10 tons were taken. The collieries of the following companies were visited, and samples obtained from each:—

BRITISH COLUMBIA.

Extension colliery, Wellington Coal Company.
Cumberland collieries, Wellington Coal Company.
Western Fuel Company.
Nicola Valley Coal and Coke Company.
Coal Creek colliery, Crow's Nest Pass Coal Campany.
Michel colliery, Crow's Nest Pass Coal Company.

ALBERTA.

International Coal and Coke Company.
Hillcrest Coal and Coke Company.
West Canadian Coal Company.
Leitch Collieries, Ltd.
Alberta Railway and Irrigation Company, Lethbridge.
Canada West Coal and Coke Company.
Breckenridge and Lund Coal Company.
Bankhead Collieries, Ltd.
H. N. McNeil Coal Company.
Parkdale Coal Company.
Standard Coal Company.
Strathcona Coal Company.

SASKATCHEWAN.

Western Dominion Collieries Company.
Eureka Coal and Brick Company.

In addition to the above, samples were secured from the Dominion Coal Company's mines, as follows:—

Colliery No. 1; Colliery No. 5, or Reserve; Colliery No. 7, or Hub; Colliery No. 9; Colliery No. 10, and Colliery No. 12.

During a great part of the summer the western coal industry was not very active. The effects of the financial and industrial depression of the previous winter had not completely disappeared, and in consequence some of the collieries were only working a few days a week during the summer months. It was felt, however, that this was only a temporary depression, and the coal operators were all looking to an early resumption of activity. This is borne out by the figures of production for the year received by the Statistician of the Mines Branch, which show that the total output of the western collieries is higher than the previous year.

In British Columbia several new collieries were being opened up on Vancouver island; in the Nanaimo field, and also on the mainland. The work of development on the Nicola Valley Coal and Coke Company's properties had so far progressed that they were equipped to mine and ship 300 tons a day; and could have kept up this rate of output had the market demanded it. The Diamond Vale Coal Company—controlling coal areas adjacent to the Nicola Valley Coal and Coke Company—sank a shaft some 70 feet deep, and reached a good workable seam. They expected to be in a position to begin shipping as soon as the coal trade resumed its activity.

In Alberta and Saskatchewan the same conditions prevail to a great extent. In the lignite districts, such as Edmonton, Lethbridge, and in the Souris field, the demand for fuel is always very light during the summer months; as the greater part of the output is used for domestic purposes. But it was expected that the mines would soon resume their full activity, to meet the usual heavy autumn demand. Industrial development in the prairie provinces is also greatly helping to establish a more even and steady production throughout the whole year. The consumption of coal by manufacturers is more uniform than the consumption for domestic purposes; the latter being very much less in summer than in winter.

One of the important results of the coal tests now being conducted at McGill University for the Mines Branch will be to show the suitability of low grade lignites in the manufacture of producer gas; which offers the best means of getting the greatest efficiency out of these low grade fuels, and of economically putting them to industrial uses. Owing to the present method of distributing electrical energy at high voltage over long distances, central power stations using producer gas could be established at the mines themselves; thereby ensuring a greater efficiency from the fuel, and effecting a marked saving in heavy transportation charges.

PRELIMINARY REPORT ON TESTS MADE IN SCOTLAND OF OIL-SHALE SENT FROM NEW BRUNSWICK IN THE SPRING OF 1908; WITH A VIEW OF ASCERTAINING ITS ECONOMIC VALUE, ESPECIALLY AS REGARDS THE CONTENTS OF CRUDE OIL AND SULPHATE OF AMMONIA.

Dr. R. W. Ells.

In connexion with the recent investigation of the bituminous, or oil-shales of Nova Scotia and New Brunswick, a shipment of some 45 tons of material obtained from, and representative of, the rich bands of oil-shale which occur at Baltimore, Albert county, N.B., was made to Glasgow, Scotland, by the Albertite, Oilite and Cannel Coal Company, Ltd., with headquarters in New York, U.S.A., but represented in New Brunswick by Mr. Matthew Lodge, of Moncton.

The importance of such a practical test of the oil-shales of the province by one of the leading Scotch companies engaged in the oil-shale industry, in order that the actual contents of crude oil and sulphate of ammonia might be determined, and its possible benefits to other parts of Canada ascertained, were so evident that, on the matter being referred to the Honourable the Minister of Mines—Hon. William Templeman—and to Dr. Eugene Haanel, Director of the Mines Branch of the Department of Mines, I was commissioned to proceed to Scotland to witness and report on the distillation tests about to be made. In pursuance with this work, I beg to submit the following report:—

I left Ottawa on May 29, 1908, for Glasgow, and arrived there on the 9th of June. I found that the shipment of shale had arrived some weeks previously, but through the absence of any order from the President of the Company in New York to obtain possession of it, several weeks elapsed before the actual business of retorting was commenced. The interim was spent in a study of the Scotch oil-shales in the field, also of the several plants, and in gathering information as to the industry generally. Arrangements were made with Mr. W. Fraser, Manager of the Pumpherston Oil Co., Glasgow—where the head office of the Company is situated—to undertake the contemplated tests both for the retorting, and the subsequent fractionation of the resulting crude oil, the whole of which was carried through with the greatest care and attention to details, hence the results may be accepted as perfectly reliable. I may say that, throughout the entire tests, invariable courtesy was extended to us. In this work I was assisted by Mr. W. A. Hamor, of New York, a chemist on the staff of Dr. Charles Baskerville, of the College of the City of New York, who was sent over to watch the process in the interest of the Company, and of whose ability I can speak very highly.

On July 13, the official order for the shale from the shipping company reached me via New York, but owing to various other delays which seemed unavoidable the material did not reach the works near Uphall until July 23. The process of distillation in the experimental Bryson retort was commenced at 4 P.M. on Friday, July 24, and continued without interruption until the 12th of August. These retorts have a capacity of 4 tons of Scotch shale per day of 24 hours; but owing to the somewhat different nature of the New Brunswick shale, as contrasted with the Scotch shale, the capacity was only about 2¼ tons per 24 hours. The shale worked readily in the retort, without clogging.

The whole process of initial retorting was most satisfactory throughout.

The official report of the Pumpherston Oil Company, Scotland, on the retorting, is as follows:—

SESSIONAL PAPER No. 26a

Yield of crude-oil and sulphate of ammonia obtained from New Brunswick shale, passed through the experimental retort at the Pumpherston works, Scotland.

Date.	Shale used.		Crude Oil.		Sulphate of Ammonia.		Remarks.
			Make.	Sp. Gr.	Yield.	Yield.	
1908.	Tons.	Cwt.	Gals.		Gals.	Lbs.	
July 25	2	4	95·85	·885	43·57	58·55	Not included in average, as shale in previous test was not all out of retort until July 26.
" 26	2	6	99·45	·907	43·24	60·51	
" 27	2	0	74·44	·920	37·22	75·38	
" 28	2	5	86.13	·917	38·28	70·62	
" 29	2	7	90·37	·911	38·88	70·01	
" 30	2	3	81·80	·920	38·04	83·18	
" 31	2	5	84·63	·916	37·61	67·46	
Aug. 1	2	3	96·87	·918	45·06	82·73	
" 2	2	3	84·32	·921	39·22	79·58	
" 3	2	4	89·42	·927	40·64	81·88	
" 4	2	4	79·56	·918	34·59	79·27	
" 5	2	3	86·75	·910	40·35	55·47	
" 6	2	5	88·70	·922	39·42	82·81	Condenser chest choked.
" 7	2	3	87·38	·918	40·64	100·69	
" 8	2	4	88·43	·921	40·19	62·45	Condenser chest cleared.
" 9	2	3	95·72	·918	44·52	79·63	
" 10	2	3	91·28	·911	42·46	81·31	Total shale received—41 tons 5 cwt.
" 11	2	0	79·90	·925	39·95	71·14	
" 12	2	0	87·58	·925	43·79	85·03	Put through before test —4 tons 10 cwt.
	36	15	1,473·28	·919	40·09	76·94	Put through during test —36 tons 15 cwt.

(Signed) For the Pumpherston Oil Co., Ltd.

G. M. McCulley,

Assistant Secretary.

August 13, 1908.

On the whole it may be safely stated that, the results of the retort tests of these shales, on the working scale, are eminently satifactory: both as regards the yields of crude oil and sulphate of ammonia; exceeding in these respects the greater part of the Scotch shales, which have been worked for many years.

The peculiar difference in the yield of these products from day to day, is inexplicable, except that it may be due to variation in the nature of the material as taken from the bed itself, or possibly to carelessness in mining, or to the inclusion of portions of the wall rock in some part of the shipment. It may also be stated that, the bed selected for this shipment at Baltimore is, judging from the physical character of the shales, by no means one of the best, being what may be regarded as a medium grade of oil contents, as contrasted with several other thick beds in the immediate vicinity; so that on the whole it may be safely asserted that a test of other beds in this area would have given even larger results in oil than the one selected, since the rich, blackish nature of some of these beds, with their jet black streaks of mineral somewhat resembling albertite in general aspect, and their curly character clearly indicate their superior quality.

At the close of the process of retorting the crude oil was ready for the fractionation test. This was carried on in the laboratory of the Pumpherston Co., by the chief chemist Mr. E. M. Bailey. Here also several delays occurred which were practically unavoidable: (1) through the absence of the chemist on his three weeks holi-

days, and (2) through his serious illness for several weeks after his return, so that the final results were considerably protracted. In this stage of the tests Mr. W. A. Hamor—my associate throughout the work—remained to supervise the final results. The report of the chief chemist, Mr. Bailey, here follows. It is endorsed by the manager, and may be regarded as very satisfactory. The fractionation was of necessity conducted entirely in the laboratory; since it was impossible to make such a test in the large works, owing to the necessity in such a case, of stopping the regular process of manufacture by the Company of their own oil-products. The fractionation report is as follows:—

'The Pumpherston Oil Co., Ltd.

'Test of shale received from Canada, through Dr. R. W. Ells.

'Crude oil made from July 27 to August 12, 1908, in the Pumpherston Retort.

REPORT ON CRUDE OIL.

'The crude oil was dealt with by two different methods for the purpose of obtaining refined products of good quality.

The liquid products produced by both methods were practically identical in quality when finished, but the colour of the crude paraffin wax or 'Scale' derived from method B. was much superior to that produced by the use of method A, a point of considerable practical importance when the conversion of the crude wax into refined wax of marketable quality comes to be considered.

It is probable, however, that further treatment with acid (before the soda treatment) of the crude distillate obtained by method A would have the effect of securing that a crude wax of good colour could be subsequently extracted.

So far as the percentage yields of refined products are concerned, these are very similar, whichever method of refining is adopted.

The following is an outline of the scheme of refining the crude oil:—

Method A.

The crude oil was distilled and fractionated into crude naphtha (1) and crude distillate (2). The crude distillate was treated with sulphuric acid (1·84 sp. gr.) and caustic soda solution (1·35 sp. gr.) and again distilled, fractionating into crude burning oil (3) heavy oil (4) and residuum (5).

Nos. (1) and (2) were further refined by treatments with acid and soda and distillations. No. 4 was cooled to a low temperature, and filter pressed to extract the solid paraffin (6). The blue oil (7) was filtered from (4), was treated with acid (1·72 and 1·84 sp. gr.) and soda (1·34 sp. gr.), distilled off solid caustic soda, and fractionated into various products, the refining of some of these being completed by a final treatment with acid and soda.

Method B.

The crude oil was treated with sulphuric acid (1·22 sp. gr.) and distilled and fractionated into crude naphtha (1) and crude distillate (2). The crude distillate was treated with sulphuric acid (1·72 and 1·84 sp. gr.) and caustic soda solution (1·35 sp. gr.) and again distilled, fractionating into crude burning oil (3), heavy oil (4) and residuum (5).

No. 4 cooled and filtered gave solid paraffin (6) and blue oil, 7. No. 7 was treated with acid (1·84 sp. gr.) and soda, distilled off solid caustic soda, and fractionated into various products, the refining of some of these being completed by a final treatment with acid and soda.

TABULAR STATEMENT OF REFINED PRODUCTS.

Method A.—Product.	Gallons per 100 Gallons.	Sp. Gr. at 60° Fahr.	S. P. Fahr.	M. P. Fahr.
Heavy naphtha	1·62	·7670		
Burning oil	10·04	·7954		
Gas oil	14·87	·8131	25°	
Cleaning oil	2·83	·8713	25°	
Lubricating oil	9·58	·8957	30°	
Crude wax	2·26			112·26°
" "	0·93			101·00°
" "				
Residuum from blue oil (refined)	0·28			
Residuum from treated crude distillate (refined)	1·27			
	43·68			

Total crude wax containing 4 p. c. oil = 3·19 gals. = 2·907 gals. refined wax. Melting point, 108·98°.

Sulphuric acid used in refining 100 gals. crude oil. = 4·705 gals. (1·84 sp. gr.)

Method B.—Product.	Gallons per 100 gallons.	Specific gravity at 60° Fahr.	S. P. °Fahr.	M. P. °Fahr.
Heavy naphtha	1·45	·7670		
Burning oil	11·50	·7955		
Gas oil	13·04	·8450	25°	
Cleaning oil	1·56	·8705	26°	
Lubricating oil	11·03	·8935	30°	
Crude wax	2·21			111·34°
"	0·60			104°
"	0·16			84°
Residuum from blue oil (refined)	0·57			
Residuum from treated crude distillate (refined)	1·95			
	44·07			

Total crude wax containing 4 p. c. oil = 2·97 gals. = 2·707 gals. refined wax. Melting point, 108·38° F.

Sulphuric acid used in refining 100 gals. crude oil = 4·68 gals. (1·84 sp. gr.)

Flash point of burning oil = 117° Fahr. (Abel Close test).

Viscosity of lubricating oil=200° F. (seconds) at 70° F. (Redwood's apparatus).

REMARKS ON QUALITY OF PRODUCTS AND SAMPLES.

Considering the character of the crude oil, and the nature of the material (which we do not consider a true oil-shale) whence it is derived, I consider the quality of the refined products very satisfactory.

The samples are representative of the products obtained by both methods of refining. It will be easily understood, however, that it is impossible to mix these in precisely their due proportions, so that the physical constants of the samples are not perfectly identical with those given in the tabular statement, but only close approximations thereto.

As it is impossible on a small scale to extract all the lower melting point portions of the crude wax by direct cooling and filter-pressing, the sp. gr. and setting point

of the cleaning oil and lubricating oil given in the statement differ somewhat from those of the samples submitted, the sp. gr. of these oils and yield of low M. P. crude wax (equivalent to 0·93 and 0·76 on the crude oil) being calculated to what would be obtained by a reduction in setting point to that obtainable on the manufacturing scale. The calculation is based on data derived from actual experiment, and is perfectly reliable.

It must be understood, however, that the yield of high M. P. crude wax (equal to 2·26 and 2·21 per cent) is that actually extracted and determined.

(Signed) EDWIN M. BAILEY,
Chemist.

PUMPHERSTON OIL WORKS,
MID CALDER,
SCOTLAND.

September 21, 1908.'

"The Pumpherston Oil Company, Limited.

Test of Shale received from Canada through Dr. R. W. Ells.

Crude oil made, from July 27, to August 12, 1908, in the Pumpherston Patent Retorts.

The retort gases, if passed through an oil scrubber, would yield some crude naphtha.

Analysis of uncondensed gas, after leaving ammonia water scrubber and returning to retort combustion chamber.

(Average of three analyses of five samples).
(Air-free).

	Per cent.
Carbon dioxide (CO)	29·67
Carbon monoxide (CO)	5·06
Olefines (C_nH_{2n})	1·33
Methane (CH_4)	11·02
Hydrogen (H_2)	52·92
	100·00

Calorific value = 305·1 B.T.U. per cubic foot (N.T.P.)
Specific gravity = 0·613 (Air = 1).
Weight per cubic foot = 0·0492 pounds.

(Signed) EDWIN M. BAILEY,
Chemist.

(Signed) For the Pumpherston Oil Co., Ltd.,
R. G. MCCULLEY,
Assistant Secretary.

PUMPHERSTON WORKS,
MID CALDER,
SCOTLAND.

September 19, 1908."

REMARKS ON CHARACTER OF THE SCOTCH SHALES.

In preparing this report, which it will be understood is merely preliminary to the complete report on the industry—which will appear in regular order—it has been deemed best to give only the main features of the Scotch shale industry: the commercial importance of which is very great; so that it may be classed as one of the great min-

eral industries of that country. The improved plants for retorting and subsequent distillation have now reached such a state of perfection that, the leading operators are able to compete successfully with Russia and the United States. The production of crude oil in Scotland for the last few years reaches annually more than 60,000,000 gallons. The production of sulphate of ammonia—now over 50,000 tons annually—and of paraffin wax and other by-products, is also very large, while the oil-shale industry, as at present conducted, is exceedingly profitable.

It is only fair, however, to emphasize the point that, the present satisfactory condition has been attained chiefly through close attention to the details of the industry; by the adoption of the most improved methods of manufacture; and by strict attention to economy in all its branches. Without all these it may be said that, in the face of the present close competition—through the production of crude native oils—any company undertaking the distillation of crude oils from shale will be seriously handicapped: and as in the case of many of the former Scotch companies, will probably be doomed to failure. This will be seen by a glance at the history of the Scotch shale-oil companies. The statistical records show that, 117 works have been in operation since the commencement of the industry nearly 60 years ago. These by 1894 had been reduced to 12, while in 1906—according to the statements published in the Bulletin on the oil-shale industry by the Geological Survey of Scotland, (1906)—they had suffered a still further reduction to six; of which two were engaged only in the business of retorting the shale for crude oil and sulphate of ammonia; the further work of fractionation or refining being carried out by another corporation. It may be said, however, that owing to the many improvements made in plants and methods, and the better organization of the companies interested, the total yield of crude oil and of the by-products has, in recent years, increased rather than diminished.

The failure of so many companies in the earlier period of the industry was stated to be due in many cases to bad management, and lack of economy in details of manufacture.

While it has been impossible to obtain full statistics of the industry in all its branches, the following figures, taken from the article written by Mr. D. R. Stuart, chemist to the Broxburn Company, and published in the official bulletin of the Geological Survey of Scotland (1906), and from other reliable sources, may be regarded as fairly accurate, as covering the two years 1903 and 1904:—

1903.

Shale mined and distilled	tons.	2,400,000
Crude oil produced	gals.	54,000,000
This was fractionated into—		
Burning oil and naphtha	"	19,000,000
Gas oil	"	6,000,000
Lubricating oils	"	8,800,000
Paraffin wax	tons	22,000
Sulphate of ammonia	"	40,000
Total value of products		£1,800,000

1904.

Shale mined	tons.	2,709,840
Value of		£544,346
Crude oil produced	gals.	62,932,400
Fractionated into—		
Naphtha	"	2,517,296
Burning oils	"	16,991,748
Gas oil	tons.	37,997
Lubricating oils	"	39,487
Paraffin wax	"	22,476
Sulphate of ammonia	"	49,600

1905.

Returns not fully available, but about the same as 1904.

As showing the gradual increase in the industry from time to time, the following may be given:—

1871, 51 works in operation—		
Shale mined	tons	800,000
Crude oil produced	gals	25,000,000
Naphtha, burning and gas oils	gals	11,250,000
Lubricating oils	gals	2,500,000
Paraffin solid	tons	5,800
Sulphate of ammonia produced	tons	2,350
1879, 18 works in operation—		
Shale mined	tons	850,000
Crude oil produced	gals	29,000,000
Naphtha, burning and gas oils	gals	11,400,000
Lubricating oils	gals	5,000,000
Paraffin solid	tons	9,200
Sulphate of ammonia	tons	4,750
1887, 13 works in operation—		
Shale mined	tons	1,869,300
Crude oil produced	gals	52,876,700
Naphtha, burning and gas oils	gals	21,680,000
Lubricating oils	gals	9,000,000
Paraffin solid	tons	22,846
Sulphate of ammonia	tons	18,483
1893, 13 works in operation—		
Shale mined	tons	1,947,842
Crude oil produced	gals	48,696,050
Naphtha, burning and gas oils	gals	20,452,341
Lubricating oils	gals	8,765,289
Paraffin solid	tons	19,130
Sulphate of ammonia	tons	28,000

In a subsequent paper by Mr. Stuart, published in 'Economic Geology' Oct.-Nov. 1906, the following statistics for 1906 are given:—

'There are at present only seven paraffin oil works in Scotland. Three are small and produce only crude oil and ammonia. Four are large and have fully equipped refineries. Two of them have candle works attached. Together they distil more than two and a half million tons of shale in a year.

1906—		
West Lothian or Linlithgowshire produced	tons	1,791,896
Mid Lothian or Edinburghshire produced	"	732,635
Lanarkshire	"	21,051
		2,545,582

In 1906 the refined products were:—

Spirit or naphtha, sp. gr. 0·680 to 0·750	imp. gals. about	2,500,000
Burning oils, sp. gr. 0·790 to 0·830	" "	17,000,000
Gas or intermediate oils, 0·850 to 0·870	tons "	38,000
Lubricating oils, 0·865 to 0·900	" "	40,000
Solid paraffin wax, m. pts., 100° to 130° F.	" "	22,500
Sulphate of ammonia	" over	50,000
Still coke, selling 60 to 70 shillings a ton	tons	5,000

The production of oil-shale in Scotland for 1907 amounted to 2,675,799 tons. The average yield of oil was 23 gallons.

He also adds that, 'the total paid up capital of the four refining companies is about one and a half million pounds sterling. The dividends last year were 5, 15, 15, and 50 per cent respectively; for this year 7, 15, 17·5 and 50 per cent; but for many years the dividend from most works was nil. The wages paid by the companies are about £700,000 a year. There are 8,300 men employed, including 3,380 miners.'

PRICES OF VARIOUS PRODUCTS AT INTERVALS FROM 1873-1903.

	1873.			1883.			1893.			1903.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Burning oil, gal.	0	1	5	0	0	5¾	0	0	5¼	0	0	5¾
Heavy oil, ton	20	0	0	9	10	0	5	0	0	6	0	0
Refined paraffin, lb	0	0	10	0	0	4	0	0	5	0	0	3
Crude paraffin scale, lb.	0	0	5				0	0	2½			
Sulp. ammonia, ton	20	0	0	17	0	0	10	0	0	12	10	0

Shale mining, as already mentioned, is carried on much in the same manner as ordinary coal-mining. The roof is supported by timber props, where possible, or by pillars, and a regular system of driveways, haulage, and other mine roads, etc., is installed. Powder in small charges is usually employed as an explosive. The foot and hanging-walls, usually separate readily from the richer oil-bearing lands.

In the regular process of mining the broken down shale is brought to the surface in small cars by wire haulage, and conveyed direct to the breakers into which it is discharged and reduced to a proper size; the breaking being done by large toothed drums which revolve upon each other. Then the broken material is conveyed to the top of the retort bench or battery in small cars, also by means of wire haulage. Here, through the application of heat, the bituminous portion is driven off as gas, which is passed through condensers, and the hydrocarbons precipitated in the form of crude oil. The resulting ammonia and water is conveyed in pipes to the ammonia house, where it is treated with sulphuric acid. The crude oil is conveyed through another set of pipes to the distillation or fractionation plant; while the waste or spent shale from the retorts is conveyed by an endless wire tram to the dumps, called 'bings,' which, through the growth of years, have become mounds of enormous size. Throughout, the whole series of operations are continuous, and the fires under the retorts are never extinguished except for necessary repairs. This part of the process will be treated in detail under the head of chemistry of the oil-shales.

The first result, therefore, in the retorting of the shale, is the yield of crude oil, and sulphate of ammonia, which varies somewhat according to the quality of the shale treated. As already noted the ammonia water—which results largely from the constant injection of steam into the retorts during the process of combustion—is converted into sulphate of ammonia through the agency of sulphuric acid, and gas; and by successive distillations and chemical treatment the resulting crude oil is made to produce the following:—

(1) Shale spirit or naphtha.

(2) Burning or lamp oil of various specific gravity, the average being about 0·800.

(3) Gas or intermediate oils, sp. gr., 0·840 to 0·860 with properties intermediate between those of burning and lubricating oils and used for gas making, gas enriching and for cleansing purposes.

(4) Lubricating oils, sp. gr. 0·865 to 0·895, of high boiling point and viscosity, used for lubricating machinery.

(5) Solid paraffin, melting point from 100° to 130° F., used for candle making and various other purposes.

(6) Still coke, still grease, tars, etc.

From the ammonia water is obtained—

(7) Sulphate of ammonia.

The history of the oil-shale industry in Scotland will be reserved for the complete report. It may be said, however, that this industry was commenced about 60 years ago, and passed through various stages of success and failure, until at the present time—due to the manifold changes and improvements in connexion with the industry as a whole—it has reached the present satisfactory condition.

In recent years through the exhaustion of the vast guano deposits—principally of the Pacific islands—attention has been specially directed to the manufacture of sulphate of ammonia, which is so extensively employed at the present day as a fertilizer. The distillation or retorting of shale has now become one of the leading branches of industry, and one of the principal sources of profit. With the more modern styles of retorts the yield of sulphate from certain grades of the shale has markedly increased: 60 to 70 pounds per ton being now obtainable in places. The price of this material has fluctuated widely, as shown by the table already given. At the present prices, high profits are realized from its manufacture from shales comparatively lean in oils, but correspondingly rich in ammonia.

The principal Scotch plants are designed on a large scale, and include everything necessary for the mining, retorting and fractionating of the oil-shales, and production in the most economic way of the various by-products, all of which tends very materially to enhance the profits of the business.

The retorting plants are made up in aggregates of single retorts, connected in groups of fours, and these groups assembled in batteries, or benches. One complete battery sometimes comprises 160 individual retorts, each having a capacity of four tons of Scotch shale per day of 24 hours, or a total per battery of 460 tons per day. These retorts are connected to batteries of condensers, in which the gases generated by the retorting of the shale are reduced to crude oil. The capacity of these plants can be estimated from the fact that, in several of them more than 500,000 tons of crude shale are treated yearly.

The cost of these plants is very large: which—from figures furnished me by several of the managers—may be approximately estimated: the initial unit, or single retort, being taken as a basis.

Thus, the price of a single retort with a capacity daily of four tons Scotch shale, erected on the ground in Scotland, is stated to be £65 to £70 per ton capacity. This single retort is furnished with a condenser plant and all necessary appliances, and may be styled an experimental retort, with which it is possible to make complete tests of any shale deposit required, in so far as the crude oil and sulphate of ammonia are concerned. It was in one of these experimental retorts at the Pumpherston Works that the tests made of the New Brunswick shale were carried out. At present this Company is apparently the only one which has a spare retort that can be used for commercial work. These retorts are charged regularly at intervals of six hours.

COST OF PLANTS.

(1) The cost of plants for the industry was furnished me by one of the leading managers, and is applicable to Scotland only. It is manifest that, for Canada this cost will be somewhat increased, owing to freight, difficulty of transport, extra cost of labour in fitting up, etc.

Assuming the cost of the initial retort at from £60 to £70 per ton of shale treated, the cost per unit of four tons capacity will be from £240 to £280. Hence, if a plant of 200 tons capacity per day is required, the cost would be 200 multiplied by say £65=£13,000, and so on in proportion to the size of the plant required. It may be remarked, however, that in our test of the New Brunswick shale, the 4 ton retort used was able to handle about 2¼ tons per day.

(2) The cost of a sulphate house with a working capacity of 1,200 tons of shale for conversion into sulphate of ammonia would be say about £5,000: so that the cost of the sulphate would be 1,200 tons into £5,000 (or $25,000), which would be about $21 per ton produced.

(3) The cost of a refining plant will be about £11,000 per million gallons of refined crude oil per annum. A refining plant, therefore, having a capacity of ten million gallons per year should cost £110,000.

At Tarbrax, some miles south of Pumpherston, where retorting only is carried on, with a capacity of from 700 to 800 tons per day, the cost of such a plant would be say £100,000—everything included, viz., crude oil plant of retorts, and fittings, sulphate house, and paraffin works.

(4) The cost of a paraffin house for such a refinery will be from £5,000 to £7,000 in Scotland. As in the case of other parts of the general plant, the figures will be somewhat greater for Canada.

On the whole, therefore, to meet contingencies, the cost of retorts, condensers, etc., can be placed at say, £70 per ton of shale capacity. In the case of the Baltimore shales tested, the reduced charge from 4 to 2¼ tons would probably add somewhat to the cost of the plant.

PRELIMINARY REPORT ON THE PEAT BOGS OF CANADA.

Messrs. E. Nyström and S. A. Anrep.

In accordance with your instructions, we started during the season of 1908 a systematic investigation of the peat bogs, in order to ascertain the extent, depth, and quality of the peat contained therein. Those first dealt with were favourably located as to transportation and market. A great number of such bogs undoubtedly exist in every province of the Dominion; but very little information in regard to their exact location is at present in our possession. A proper investigation of a peat bog, especially one covering thousands of acres, occupies considerable time, and before any conclusions can be arrived at as to the average suitability for the manufacture of fuel or other peat products, many seasons' work will be required.

INVESTIGATION IN ONTARIO.

During the season of 1908 the following bogs—all located in the province of Ontario—were investigated:—

(1) The Mer Bleu peat bog, situated in Gloucester and Cumberland townships.
(2) The Alfred peat bog, situated in Alfred and Caledonia townships.
(3) The Newington peat bog, situated in Osnabruck and Cornwall townships.
(4) The Perth peat bog, situated in Drummond township.
(5) The Victoria Road peat bog, situated in Carden township.
(6) The Welland peat bog, situated in Wainfleet and Humberstone townships.

Part of the summer was spent at Victoria Road peat plant, which is the only factory in Canada where we could obtain adequate power and drying arrangements for the manufacture of some air-dried peat fuel with the Anrep peat machine imported from Sweden. The peat machine itself fulfilled every expectation; but the rest of the work had to be done under great difficulties on account of the poor condition of the plant, and the work had finally to be given up. Enough fuel was made, however, to start the gas producer plant now being installed at Ottawa.

During the year, only one peat plant in Canada was in operation during part of the season. This plant, which is operated by Dr. J. McWilliam, of London, Ontario, is situated near Dorchester Station, some ten miles from London.

PRELIMINARY REPORT ON COAL AND COAL MINING IN NOVA SCOTIA.

Joseph G. S. Hudson, M.E.

In compliance with your instructions, I have—since July 15, 1908—been almost continuously occupied in the preparation of material for a report on coal and coal mining in tre province of Nova Scotia. The following list of sub-titles will indicate the scope and character of the work:—

(1) Area and extent of the coal field.

(2) Early history of mining in Nova Scotia.

(3) Development and expansion of the coal trade.

(4) Coal companies, railways, and shipping piers.

(5) Descriptive articles on the works and mines of the coal companies operating in the province of Nova Scotia.

(6) Mode and method of working coal; sections of the coal seams, together with information and data on coal cutting, haulage machinery, and general appliances.

(7) Accidents in mines; the use of safety explosives, and rescue stations.

(8) Tabulated rates of wages, and employees' contracts.

(9) On screening and coal handling appliances; also on the improvement in value of secondary coals, by means of wash plants.

(10) Advisability of indirectly transforming slack coal into electrical energy at the mine, for transmission to manufacturing centres.

(11) The working of coal seams under submarine areas.

PRELIMINARY REPORT ON THE GYPSUM DEPOSITS AND INDUSTRY OF NOVA SCOTIA AND NEW BRUNSWICK.

W. F. Jennison, M.E.

Gypsum in the provinces of Nova Scotia and New Brunswick has been known to exist since the discovery of the country, and the deposits have been operated to a more or less extent for nearly a century.

The development of this mineral in Canada to-day, is only in the primary stage, and has not made the same progress exhibited by other countries.

The operations are carried on almost exclusively by American capital, and the product of the quarries is shipped to the United States in a crude condition for further treatment.

The deposits occur as huge masses, some of which cover square miles in area, having exposures of over 100 feet in height—above water level—and extending several thousand feet. They may be considered practically unlimited, with a quality unsurpassed anywhere in the world.

During the past decade there has been a great increase in the production of gypsum, and in the demand for the various articles manufactured from gypsum. Production in the United States increased over 500 per cent. This fact, and the promising outlook that the demand will continue to increase, make these deposits of great economic value, and one of the most important natural resources of the country.

Realizing these conditions, and perceiving that the comparatively small development of these deposits is due to the lack of information already obtained, and also that it is very important our own citizens and all others interested, should have full information as to the extent and uses of gypsum, and demand for the many products manufactured therefrom, I was instructed July 16, 1908, to prepare a monograph showing:—

(1) History and distribution of gypsum deposits.
Varieties and distribution of gypsum.
(2) The trade history of Canada.
Statistics and graphic charts of gypsum production.
The geography and topography of the Canadian gypsum deposits, with maps and photographs, showing extent of deposits and facilities of manufacture and shipping.
(3) Origin of gypsum, general theories.
(4) Deposition from sea water, by thermal springs by the action of iron pyrites on the carbonate of lime.
(5) Gypsum as a fertilizer. Its uses among ancient people.
The experiments by well known authors.
Theories of action on gypsum as a fertilizer.
(6) The chemistry of gypsum, plaster of Paris, cement plaster, methods of analysis.
(7) Technology of gypsum.
General and physical properties.
(8) General requirements of a plaster mill, with cuts and specifications and costs of construction.
Chemistry of the manufacture of plaster.
Retarders and accelerators.
(9) The methods of operation, with costs.
(10) Markets, and value of product.

Up to date, the following important deposits have been examined, viz.:—

In Victoria county, N.S.: North and Middle harbour, Aspy bay; South bay, Ingonish; Goose cove, North Gut, and South Gut, St. Ann bay; St. Ann Glen, Port Bevis, Bevis point, McKenzie point, Plaster Mines, Baddeck bay; Island point, Boularderie island; deposits on Baddeck and Middle rivers, at Nyanza, Little Narrows, Jubilee, Washaback river, Estmere, Ottawa brook, McKinnon harbour, McKinnon Intervale, Red point, Jamesville, Iona, Grass pond, and Gillis pond.

In Cape Breton county, N.S.: The Curry deposits and Steel deposits at East bay; the deposits on Morley's road, and the north side of East bay.

In Richmond county, N.S.: the deposits at River Town, Bar point, Grandique, and at the head of Arichat harbour.

In Inverness county, N.S.: Little harbour, Militia point, Gillis pond, Donald McKinnon's, Malagawatchkt harbour, Plaster island, McKenzie brook, East side of the mouth of Denys river, The Boom, Alba, West Alba, and the south side of Whycocomagh bay.

Many of these deposits are of great magnitude, practically inexhaustible, and all within a reasonable distance of water transportation.

A few, particularly those in the vicinity of Bevis point, Malagawatchkt, and McKinnon harbour, show anhydrite in considerable quantities. At Bevis point it predominates, destroying the value of the deposit.

At other points, for example those on the south side of Bras d'Or lake, no anhydrite is visible.

The greater part of these deposits is very well exposed and shows a soft white compact variety, excellent for manufacturing purposes.

The following analyses made by Mr. F. G. Wait, Chemist for the Department of Mines, will serve to show the chemical composition of some of these deposits—all located in Nova Scotia:—

No.	1	2	3	4	5	6	7
Lime	32·87	33·10	41·30	31·62	33·12	33·62	32·97
Sulph. anhyd	46·07	45·95	57·81	42·96	45·88	45·28	46·16
Water-loss by ignition	20·89	20·85	·82	20·44	21·10	21·06	21·00
Ferric oxide				·95			
Insoluble mineral matter	·12	0 07	·07	3·60	·22	·05	·15
Bitumen			·08				
	99·95	99·97	100·08	99·57	100·32	100·01	100·28

No. 1, Gypsum, Alex. Curry deposit, East bay, Cape Breton.
No. 2, " Alex. Steel " " "
No. 3, Anhydrite, McLeod lot, Middle harbour, Cape North, Victoria county.
No. 4, Gypsum (dark), north side of East bay, Cape Breton.
No. 5, " Donovan lot, South bay, Ingonish, Victoria county.
No. 6, " McPherson lot, Middle harbour, Cape North, Victoria county.
No. 7, " McLeod lot, " " "

REPORT OF A VISIT TO SOME PRODUCER GAS PLANTS IN AND AROUND THE CITY OF BERLIN, GERMANY.

B. F. Haanel, B.Sc.

Five gas producer plants were visited; four of which were situated in Berlin and vicinity. Of the four inspected in Berlin and vicinage, two were equipped with anthracite producers; one with a coke producer; and one with a lignite (brown coal) briquet producer. The fifth was installed at the plant of the Körting Brothers at Hanover, and was equipped with a producer for gasifying badly caking bituminous coal.

COKE PRODUCER GAS PLANT.

This plant is situated at Wilmersdorf, a suburb of Berlin, and is used for pumping water for city purposes.

The equipment consists of four 400 h.p. two cycle, Körting gas engines—using either producer or illuminating gas—and two large coke gas producers. Under ordinary circumstances coke would never be used whenever cheaper fuel is available, inasmuch as its cost is prohibitive. In this case, however, the municipality operating this pump station also operates an illuminating gas plant, the coke from which is used to generate gas for the pumping engines.

This plant has been operated continuously for several years, and the cost of repairs and up-keep is said to be extremely low: much below that for a steam plant of like capacity, used for a similar purpose.

It may be of interest to note that, the number of revolutions of the engine varies according to the work done: from 30-90—the efficiency of the engine remaining constant.

The consumption of coke per effective horsepower hour is 1·5 kg. (3·3 lbs.), which seems excessive, and as it costs at Wilmersdorf from 30 to 40 marks ($7.20 to $9.60 per ton), coke—especially at this place—cannot be called an economical fuel.

ANTHRACITE PRODUCER.

A plant, consisting of three gas engines of 110 effective horsepower each, and three anthracite gas producers, was installed in the basement of the warehouse of A. Yandorf and Company, Berlin. The power developed was used for generating electricity for light and power purposes.

This plant has been in operation for four years, and employs a chief engineer, one assistant engineer and one stoker. The cost of repairs during the four years it has been running is said to be very low.

The consumption of fuel per effective horsepower hour is 0·38 kg. (0·836 lbs.), which is very satisfactory, the builders in this case guaranteeing one lb. per horsepower hour.

No trouble at all is experienced from any source with these producers, and the labour of stoking and cleaning of ashes is almost negligible.

An interesting feature of this installation is the arrangement of the charging hoppers of the producers. As described above, the producers are situated in the basement of the building, and the roof of that part containing the producers is level with the ground above, and constitutes the driveway for trucks, etc. The charging hoppers of the battery of producers project through this roof into this open court or driveway,

and the fuel is simply hauled beside the charging hoppers and dumped into the coal boxes contiguous to them.

By this method, the cost of stoking—in addition to being accomplished in the open air—is reduced to a minimum.

The waste gases of the engine exhaust—which are a nuisance in most gas engine plants, owing to the odour and noise—are in this plant discharged at the top of the building, which is four stories high.

The cost of fuel delivered is 19 marks ($4.56) per metric ton. A metric ton corresponds to the English long ton, from which it will readily be seen that the plant is very economical.

The second anthracite gas producer plant visited was that of the Spindlershof Geschaftshaus, Berlin.

This installation is composed of two engines of 110 h.p., running at 160 revolutions per minute—used for lighting; and one engine 180 h.p., 140 R.P.M., used for power purposes. The anthracite gas producers in this plant are identical with those employed in that described above. The engines and producers have been in constant use for six years, during which time no troubles of any kind have been experienced, and during this period the cost of repairs was remarkably low.

The average consumption of fuel per effective horsepower is 0·40 kg., about 0·88 lbs. The price of coal delivered at this plant is about 19 marks ($4.56).

LIGNITE PRODUCER GAS PLANT.

Several plants operated by means of lignite producer gas, are scattered throughout Germany, all of which are said to give entire satisfaction. Since these plants do not differ in any salient feature, the examination of one installation was deemed sufficient.

The plant visited was that of the O. Jachmann Foundry Co., Berlin. The installation consisted of one gas engine of 110 h.p., and one of 210 h.p., the gas being supplied by two lignite (brown coal) gas producers. Lignite (brown coal) briquets are used.

The plant has been in use for some years, and during this period has given complete satisfaction.

The Körting lignite producer is a combination of the up-draft and down-draft types, air being supplied at both top and bottom. The producer gas is drawn off from the middle.

Reliable data on the fuel consumption could not be obtained.

CAKING BITUMINOUS COAL PRODUCER.

The only producer gasifying caking bituminous coal inspected was at the workshops of the Körting Brothers, Hanover, and was utilized as part of the permanent power installation, for generating electricity. This producer is of 150 h.p. capacity, and has been run for a period of six weeks—twelve hours per day—without closing down. The only reason for terminating the run at the end of that period was, an accident to the electric generator. During the entire length of the run, no trouble of any sort was encountered, scarcely any poking of the fuel bed was resorted to, and the gas delivered to the engines was of a uniform quality. While no trouble was experienced in the running of the gas engines on account of tarry matter, an inspection after closing down disclosed the fact that, about 3 mm. of tar and soot were deposited on the walls of the cylinder, and in the entry and exhaust pipes.

The fuel consumption during the run was about one lb. per effective horsepower hour.

The smallest producer which the Körting Brothers guarantee to operate successfully on caking bituminous coal, is of 150 h.p. capacity; any smaller generator will not operate for any length of time, owing to the fusing of the coal.

APPENDIX I.

PROGRESS OF ELECTRIC SMELTING IN NORWAY.

Extract from letter to Dr. Eugene Haanel, Director of Mines, from one of the inventors of the Electric Shaft Furnace, Sweden.

LUDVIKA, March 9, 1909.

'As I believe it to be of interest to you, I can tell you that we recently made a contract for an electric smelting plant in Norway. The first installation will be built this summer, and includes two high furnaces, 2,500 h. p. each, and two steel furnaces, 600 h. p. each. All the furnaces are to be supplied with two-phase current. The plant will later be extended with four more high furnaces of the same size, and four steel furnaces of larger size.

At present we are busy with the working out of the drawings and specifications for this plant. Besides the electric smelting plant, the installation will include also a rolling mill for billets and flat iron. We have every reason to suppose that the plant will be erected in a perfectly modern and commercial way, as everything is newly designed.

As soon as the drawings are ready, we shall be glad to send you an outline drawing of the whole plant, from which you will be able to see the arrangement of the different parts.

(Signed.) OTTO STALHANE.'

APPENDIX II.

MINERAL PRODUCTION OF CANADA 1907-8.

EUGENE HAANEL, Ph.D.,
Director of Mines.

SIR,—I beg to submit herewith the annual preliminary report on the mineral production of Canada in 1908, including a table showing the revised statistics of production in 1907.

The figures of production given for 1908 are, of necessity, subject to revision, since at this time, in many instances, producers of metallic ores have not themselves received complete returns from smelters. For these and other reasons, estimates have to be made. It is hoped, however, that this preliminary statement may serve to give a general idea of the gross output of the mineral industry during the year.

When more complete information is available, the annual report will be prepared. It will contain the final statistics in greater detail, as well as information relating to exploration, development, prices, markets, imports and exports, etc.

Acknowledgments are due to the various operators who have promptly furnished statements of their production, to the Provincial Mineralogist of British Columbia for a complete preliminary statement of mineral production in the province, and to the other provincial mining bureaus for assistance kindly rendered.

I am, sir, your obedient servant,

(Signed) JOHN MCLEISH.

DIVISION OF MINERAL RESOURCES AND STATISTICS,
February 25, 1909.

(Continued.)

APPENDIX II—*Continued.*

8-9 EDWARD VII., A. 1909

THE MINERAL PRODUCTION OF CANADA IN 1907.

(Revised.)

Product.		Quantity. (*a*)	Value. (*b*)
METALLIC.			$
Antimony ore	Tons.	2,016	65,000
" refined	Lbs.	63,850	5,108
Copper (*c*)	"	56,525,541	11,307,369
Gold	Ozs.	405,553	8,382,780
Pig iron from Canadian ore (*d*)	Tons.	107,599	1,982,307
Iron ore (exports)	"	25,901	45,907
Lead (*e*)	Lbs.	47,738,703	2,542,086
Nickel (*f*)	"	21,189,793	9,535,407
Cobalt			72,133
Silver (*g*)	Ozs.	12,779,799	8,348,659
Zinc ore	Tons.	1,573	49,100
Total			42,335,856
NON-METALLIC.			
Arsenic			41,303
Asbestos	Tons.	62,130	2,484,768
Asbestic	"	28,296	20,275
Chromite	"	7,196	72,901
Coal	"	10,511,426	24,381,842
Corundum	"	1,892	177,922
Feldspar	"	12,584	29,819
Graphite	"	579	16,060
" artificial	Lbs.	407,779	
Grindstones	Tons.	5,414	60,376
Gypsum	"	485,921	646,914
Limestone for flux in iron furnaces	"	395,503	298,097
Manganese ore	"	1	22
Mica	"	774	312,599
Mineral pigments—Barytes	"	2,016	4,500
" " Ochres	"	5,828	35,570
Mineral water			110,524
Natural gas (*h*)			815,032
Peat	Tons.	50	200
Petroleum (*i*)	Bls.	788,872	1,057,088
Phosphate	Tons.	824	6,018
Pyrites	"	46,243	212,491
Quartz	"	56,685	124,148
Salt	"	72,697	342,315
Talc	"	1,534	4,602
Tripolite	"	30	225
Total			31,255,551

(*a*) Quantity of product sold or shipped.

(*b*) The metals, copper, lead, nickel and silver, are, for statistical purposes, valued at the final average value of the refined metals in New York. Pig iron is valued at the furnace, and the non-metallic products at the mine or point of shipment.

(*c*) Copper contents of ore, matte, etc., at 20·004 cents per pound.

(*d*) The total production of pig iron in Canada in 1907 was 651,962 short tons, valued at $9,125,226, of which it is estimated about 107,599 tons valued at $1,982,307 should be attributed to Canadian ore, and 544,363 tons, valued at $7,142,719, to the ore imported.

(*e*) Lead contents are of ore, matte, etc., at 5·325 cents per pound.

(*f*) Nickel contents of matte shipped at 45 cents per lb.

(*g*) Silver contents of ore, etc., at 65·327 cents per lb.

(*h*) Gross returns from sale of gas.

(*i*) Deduced from the amount paid in bounties and valued

SESSIONAL PAPER No. 26a

THE MINERAL PRODUCTION OF CANADA IN 1907—*Concluded.*

(Revised.)

Product.		Quantity. *(a)*	Value. *(b)*
STRUCTURAL MATERIAL AND CLAY PRODUCTS.			$
Cement, natural	Bls.	5,775	4,043
" Portland	"	2,436,093	3,777,328
Clay products—			
Bricks, Common	No.	439,015,556	3,455,524
" Pressed	"	78,922,092	794,722
" Paving	"	3,617,720	72,354
" Moulded and ornamental			47,288
" Fire-brick and fire-clay shapes			131,322
Other clay products, including fire-proofing bricks and blocks			89,389
Pottery			253,809
Sewer pipe			667,100
Tiles, drain			288,018
Lime	Bushels.	5,103,316	1,035,795
Stone—			
Building stone			1,830,000
Flagstones	No.	3,000	2,250
Granite	Tons.	151,136	194,712
Slate	Squares.	4,335	20,056
Sand-lime brick	No.	16,492,971	167,795
Sand and gravel (exports)	Tons.	298,095	119,853
Total, structural material, etc			12,951,358
" all other non-metallic			31,255,551
Total, non-metallic			44,206,909
" metallic			42,335,856
Estimated value of mineral products not reported			300,000
Total value, 1907			86,842,765

Annual Mineral Production in Canada since 1886.

1886	$10,221,255	1898	$38,412,431
1887	10,321,331	1899	49,234,005
1888	12,518,894	1900	64,420,983
1889	14,013,113	1901	65,804,611
1890	16,763,353	1902	63,211,634
1891	18,976,616	1903	61,740,513
1892	16,623,415	1904	60,073,897
1893	20,035,082	1905	69,525,170
1894	19,931,158	1906	79,057,308
1895	20,505,917	1907	86,842,765
1896	22,474,256	1908	87,323,849
1897	28,485,023		

PRELIMINARY REPORT ON THE MINERAL PRODUCTION OF CANADA IN 1908.

(Subject to revision.)

Product.		Quantity. (a)	Value. (b)
METALLIC.			$
Copper (c)	Lbs.	64,361,636	8,500,885
Gold	"	.....	9,559,274
Pig iron from Canadian ore (d)	Tons.	99,420	1,664,302
Lead (e)	Lbs.	45,725,886	1,920,487
Nickel (f)	"	19,143,111	8,231,538
Cobalt	"	1,853,286	112,253
Silver (g)	Ozs.	22,070,212	11,667,197
Total value, metallic		.....	41,655,936
NON-METALLIC.			$
Arsenic	Tons.	699	38,054
Asbestos	"	65,534	2,547,507
Asbestic and asbestic sand	"	25,239	25,829
Calcium carbide	"	6,864	417,150
Chromite	"	7,225	82,008
Coal	"	10,904,466	25,567,235
Corundum	"	1,039	100,389
Feldspar	"	7,877	21,099
Graphite	"	251	5,565
Grindstones	"	3,843	45,128
Gypsum	"	340,964	575,701
Limestone for flux in iron furnace	"	418,661	289,705
Magnesite	"	120	840
Mica	"	.....	191,602
Mineral pigments—			
Barytes	"	4,091	18,265
Ochres	"	4,746	30,440
Mineral waters	"	.....	109,391
Natural gas (h)	"	.....	1,012,060
Petroleum (i)	Bls.	527,987	747,102
Phosphate (apatite)	Tons.	1,596	14,794
Pyrites	"	47,336	224,824
Quartz	"	27,134	32,277
Salt	"	79,975	378,798
Talc	"	1,076	3,048
Tripolite	"	30	195
Total value, non-metallic		.....	32,479,006

(a.) Quantity of product sold or shipped.

(b.) The metals, copper, lead, nickel and silver are for statistical and comparative purposes valued at the final average value of the refined metal in New York. Pig iron is valued at the furnace and non-metallic products at the mine or point of shipment.

(c.) Copper contents of ore, matte, etc., at 13·208 cents per pound.

(d.) The total production of pig iron in Canada in 1908 was 630,835 short tons valued at $8,111,194, of which it is estimated about 99,420 tons valued at $1,664,302 should be attributed to Canadian ore, and 531,415 tons valued at $6,446,892 to the ore imported.

(e) Lead contents of ore, matte, etc., at 4·200 cents per lb.

(f.) Nickel contents of matte shipped at 43 cents per lb.

(g.) Silver contents of ore, etc., at 52·864 cents per lb.

(h.) Gross return from sale of gas.

(i.) Deduced from the amount paid in bounties and valued at $1.41½ per barrel.

SESSIONAL PAPER No. 26a

PRELIMINARY REPORT ON THE MINERAL PRODUCTION OF CANADA IN 1908—*Concluded.*

(Subject to revision.)

Product.	Quantity. (a)	Value (b)
STRUCTURAL MATERIAL AND CLAY PRODUCTS.		$
Cement—natural ... Bls.	1,044	815
" Portland ... "	2,665,289	3,709,063
Flagstones ... No.	4,000	3,600
Sand and gravel (exports) ... Tons.	298,954	161,387
Sewer pipe		514,042
Clay products, stone, lime, etc., Estimated		8,500,000
Total structural material and clay products		12,888,907
All other non-metallic		32,479,006
Total value non-metallic		45,367,913
Total value metallic		41,655,936
Estimated value of mineral products not reported		300,000
Total value, 1908		87,323,849

REMARKS.

A preliminary review of the mineral production in Canada in 1908 shows a total mineral output valued at slightly over $87,000,000, as compared with a little less than $87,000,000 in 1907.

The industry has, therefore, in the aggregate more than held its own despite the large decreases in the prices of the metals. That this falling off in the prices of the metals has been an important and serious question for the metal mining industries, will be better realized when it is stated, that had the metals, copper, silver, lead and nickel maintained as high average prices in 1908 as in 1907, their total production in Canada in 1908 would have been worth over $8,000,000 more to the producers than was actually the case.

A comparison of average monthly prices of metals in 1907 and 1908 as quoted by the Engineering and Mining Journal of New York, showing the decreases in 1908 both in price and percentage, is given hereunder:—

COMPARISON OF PRICES OF METALS, 1907 and 1908.

	1907.	1908.	Decrease in 1908.	Percentage of Decrease.
	Cts.	Cts.	Cts.	%
Copper	20·004	13·208	6·796	33·97
Lead	5·325	4·200	1·125	21·12
Nickel	45·000	43·	2·	4·44
Silver	65·327	52·864	12·463	19·07
Spelter	5·962	4·726	1·236	20·73
Tin	38·166	29·465	8·701	22·79

The outstanding feature of the mining industry during the year has undoubtedly been the silver production, a total increase of over 72 per cent being shown in the

number of ounces produced. The metals copper and gold also show important increases in quantity produced, whilst iron, lead and nickel were produced in slightly smaller quantity than in 1907.

In the non-metallic class, decreases in gypsum and petroleum are more than counterbalanced by increases in coal, asbestos, natural gas, salt, etc. The Portland cement industry shows a small increase in sales, and a large increase in quantity of cement made with large stocks on hand at the close of the year.

The two following tables will illustrate these special features of increases and decreases more clearly, the first showing the total increases or decreases in value of some of the more important products and the second the percentage increase or decrease in quantity as well as value.

Product.	Increase.	Decrease.
Copper		$2,806,484
Gold, Yukon	$ 450,000	
Gold, all other	726,494	
Pig iron, from Canadian ore		318,005
Lead		621,599
Nickel		1,303,869
Silver	3,318,538	
Asbestos	62,739	
Chromite	9,107	
Coal	1,185,393	
Gypsum		71,213
Natural gas	197,028	
Petroleum		309,986
Portland cement		68,265
Pyrites	12,333	
Salt	36,483	

Product.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
	%	%	%	%
Metallic –				
Copper	13·86			24·82
Gold	14·03		14·03	
Pig iron (from Canadian ore only)		7·60		16·04
Pig iron (from home and imported ore)		3·24		11·11
Lead		4·22		24·45
Nickel		9·66		13·67
Silver	72·69		39·75	
Non-metallic –				
Asbestos and asbestic	0·38		2·73	
Coal	5·21		5·27	
Feldspar		37·40		29·27
Gypsum		29·83		11·01
Natural gas			24·00	
Petroleum		33·07		29·32
Salt	10·01		10·66	
Portland cement	9·41			1·81

Gold.—For the first time in nine years the gold output shows an increase over the previous year. The Yukon output in 1908 is estimated at about $3,600,000 as compared with $3,150,000 in 1907, while a considerably increased production is also shown in the province of British Columbia, derived chiefly from the Trail Creek ores, the placer workings having shown a smaller output.

In Nova Scotia the output in 1907 was $282,686. Complete returns are not yet available for 1908, but the output was probably not over $225,000.

Of the total gold output in 1908, over 44 per cent was obtained from placer and hydraulic workings and 56 per cent from sulphuret and quartz ores.

Silver.—The estimated silver production of Canada in 1908 was 22,070,212 ounces, shipped as fine bars, silver bullion, and obtained in matte, ores, etc.; as compared with 12,779,799 ounces produced in 1907, an increase of over 72 per cent. Owing, however, to the much lower price received in 1908, the total value shows an increase of only 40 per cent. Over 87 per cent of the output was obtained from Ontario, and the increase is all to be credited to this province, since there was a slight falling off in the silver output of British Columbia.

The price of refined silver varied between a maximum of 57 cents on January 8, and a minimum of 47⅝ cents on December 2, the average monthly price being 52·864 cents per ounce, as compared with 65·327 cents in 1907.

The output from the Cobalt district in the province of Ontario again shows a very large increase over the previous year, nearly twice as much silver having been produced. Returns from 29 shipping mines show the ore and concentrates shipped, as approximately 25,497 tons, containing 19,296,430 ounces of silver; as compared with 14,644 tons containing 9,982,363 ounces in 1907. Valued at the average price of refined silver for the year, the production in 1908 would be worth $10,200,865, and it represents an average return of 756 ounces of silver or $400 per ton of ore shipped; as compared with an average return of 681 ounces of silver or $445 per ton of ore shipped in 1907.

If the output of this district continues to increase at the present rate, Canada will, in the immediate future, become one of the chief silver producing countries of the world. The total silver production of the world in 1907 was approximately 193 million ounces, the chief contributing countries being, Mexico 65 million ounces, United States, 59 million ounces, Australia 17 million ounces, Canada nearly 13 million ounces, Germany 12 million ounces. With an output of 22 million ounces in 1908 Canada probably moves up to third place, but still does not produce more than from 10 to 12 per cent of the world's output.

Copper.—Statistics of copper production in 1908 show a total output of 64,361,636 lbs., an increase of over 14 per cent over the production of 1907. There was an increase of over 900,000 lbs. in the copper from the Sudbury mines, while preliminary statistics of production in British Columbia appear to show a very important increase in production in that province of over 7,000,000 pounds.

The New York price of electrolytic copper varied but slightly during the year, the lowest being 12 cents in February and the highest 14¼ cents in December, the average for the year being 13·208.

The total exports of copper in ore, matte and blister were, according to Customs Department returns, 25,568 tons.

Lead.—All of the lead production shown in the general table, viz., 45,725,886 pounds valued at $1,920,487, was obtained in the province of British Columbia. The production in 1907 was 47,738,703 pounds valued at $2,542,086, a decrease in quantity being therefore shown of about 4 per cent.

The total amount paid as bounty on lead production was, during the twelve months, $139,064.57.

The exports of lead in ore, etc., during the year were 2,256 tons, and of pig lead 6,971 tons or a total of 9,227 tons.

The price of lead in New York during the year varied between 3·60 and 4·60 cents, averaging about 4·2 cents per pound.

Nickel.—With the exception of the nickel contained in the ores shipped from the Cobalt district, the production of nickel in Canada is derived entirely from the well-known nickel-copper deposits of the Sudbury district. Previous to 1906 the output had been increasing steadily for a number of years. During the past three years,

however, the production has not varied very greatly. About 815 tons less matte were shipped in 1908 than in 1907. The nickel contents were also somewhat lower in 1908, averaging about 45·1 per cent as compared with 48·1 per cent in 1907. On the other hand the copper contents were higher in 1908.

Two companies are carrying on active operations: The Mond Nickel Co., at Victoria Mines, and the Canadian Copper Co., at Copper Cliff. The ore is first roasted and then smelted to a Bessemer matte containing from 77 to 80 per cent of the combined metals, copper and nickel, which is shipped to the United States and Great Britain for refining.

The following were the aggregate results of the operations on the nickel-copper deposits of Ontario in 1906, 1907 and 1908:—

	1906. Tons of 2,000 lbs.	1907. Tons of 2,000 lbs.	1908. Tons of 2,000 lbs.
Ore mined	343,814	351,916	409,551
Ore smelted	340,059	359,076	360,180
Bessemer matte produced	20,364	22,041	21,179
" shipped	20,310	22,025	21,210
Copper contents of matte shipped	5,265	6,996	7,503
Nickel " "	10,745	10,595	9,572
Spot value of matte shipped	$4,628,011	$3,289,382	$2,930,989
Wages paid	1,117,420	1,278,694	1,286,265
Men employed	1,417	1,660	1,690

According to Customs returns exports of nickel in matte, etc., were for twelve months ending December 31, as follows:—

	1906. Pounds.	1907. Pounds.	1908. Pounds.
To Great Britain	2,716,892	2,518,338	2,554,486
To United States	17,936,953	16,857,997	16,865,407
	20,653,845	19,376,335	19,419,893

The price of refined nickel in New York, was quoted during the first nine months at from 45 to 50 cents per pound, and during the balance of the year from 40 to 45 cents according to size and terms of order.

The above figures do not include the nickel contents of the silver-cobalt ores from the Cobalt district, of which it is difficult to obtain satisfactory returns. The shippers of silver-cobalt ores receive little or no return for the nickel contents although this metal forms an important constituent of the ore.

Iron Ore.—The total shipments of iron ore from mines in Canada in 1908 were 203,490 short tons, valued at the mine at $486,857, as compared with 312,496 tons valued at $666,941 in 1907. The greater part of this production was from the Helen mine, Michipicoten, delivered to Midland and Hamilton. During 1908 very little Canadian ore was exported.

Pig Iron.—The total production of pig iron in Canada in 1908, from both Canadian and imported ores, according to direct returns from nine plants comprising 16

furnaces, was 630,835 short tons valued at $8,111,194, as compared with 651,962 tons valued at $9,125,226 in 1907. These figures do not include the output from the two electric furnace plants, making ferro-products, which are situated at Welland, Ontario, and Buckingham, Quebec. Of the total output of pig iron during 1908, 6,709 tons, valued at $171,383 were made with charcoal as fuel, and 624,126 tons valued at $7,939,811 with coke.

The amount of Canadian ore, including mill cinder, etc., used was 219,266 tons; while the quantity of imported ore was 1,051,445 tons. The total amount of coke used during the year was 817,746 short tons valued at $1,770,320. The total amount of charcoal used was 1,121,990 bushels valued at $85,738. The quantity of limestone flux charged was 483,065 tons.

The plant of the Atikokan Iron Co., Ltd., was out of commission throughout the year, while a number of others were operated for a part of the year only. The blast furnace at Londonderry was in blast for little over a month and the furnace of the Deseronto Iron Co., Ltd., for about two months.

Steel.—The returns for the year from eight companies making steel showed a total output of ingots and castings of 588,763 short tons valued at $9,233,602; as compared with 706,982 tons valued at $15,612,590 from seven companies in 1907.

These figures are made up as follows:—

—	1907.		1908.	
	Tons.	$	Tons.	$
Ingots—Open-hearth (basic)	459,240	9,157,703	443,442	6,001,277
Bessemer (basic)	225,989	4,293,791	135,557	2,535,287
Castings—Open-hearth (acid and basic)	20,602	2,031,380	9,051	617,126
Other steels	1,151	129,716	713	79,912
	706,982	15,612,590	588,763	9,233,602

Iron and Steel Bounties.—Following is a statement of the bounties paid on iron and steel during the calendar year, as kindly furnished by the Trade and Commerce Department:—

—	1907.		1908.	
	Quantity on which Bounty was paid.	Bounty.	Quantity on which Bounty was paid.	Bounty.
	Tons.	$ cts.	Tons.	$ cts.
Pig iron made from Canadian ore	95,914·97	201,421 47	101,647	213,458 34
Pig iron made from imported ore	537,803·45	591,583 80	517,427	569,166 93
Total, pig iron	633,718·42	793,005 27	619,074	782,628 27
Steel ingots	666,589·87	1,099,873 37	556,289	917,876 63
Steel wire rods	68,738·22	412,417 26	49,630	297,778 68
Total bounty paid on iron and steel		2,305,295 90		1,998,283 58

Asbestos.—Returns of shipments of asbestos for the Eastern Townships, province of Quebec, were received from twelve operating companies employing 2,643 men in mine and mills, and paying in wages $1,002,768. Several other companies were engaged in development work and preparing to make shipments during the coming year.

The total shipments divided into crude and mill stock were in 1907 and 1908 as follows:—

	1907.		1908.	
	Tons.	Value.	Tons.	Value.
		$		$
Crude	4,327	830,633	3,346	692,232
Mill stock	57,803	1,654,135	62,188	2,855,275
Total asbestos	62,130	2,484,768	65,533	2,547,507
Asbestic and asbestic sand	28,296	20,275	25,239	25,829
Total products	90,426	2,505,043	90,772	2,573,336

Exports of asbestos, according to Customs returns, were:—

	Tons.	Value.
		$
Twelve months ending December, 1906	59,864	1,689,257
" " " 1907	56,753	1,669,299
" " " 1908	61,210	1,842,763

Coal and Coke.—Each of the coal mining provinces except British Columbia, contributed an increased output to the coal production of Canada in 1908. The total sales and shipments of coal, including colliery consumption and coal used in making coke, were 10,904,466 short tons, an increase of about 5 per cent as compared with 1907. Of the total, Nova Scotia contributed over 59 per cent, Saskatchewan and Alberta over 19 per cent and British Columbia 21 per cent.

The production by provinces was approximately as follows, the figures, of course, being still subject to correction:—

Province.	1907.		1908.	
	Tons of 2,000 lbs.	Value.	Tons of 2,000 lbs.	Value.
		$		$
Nova Scotia	6,354,133	12,764,999	6,539,866	13,138,124
New Brunswick	34,584	77,814	60,000	135,000
Saskatchewan	151,232	252,437	130,000	214,500
Alberta	1,591,579	3,836,286	1,845,000	4,899,611
British Columbia	2,364,898	7,390,306	2,329,600	7,280,000
Yukon	15,000	60,000	*	*
Total	10,511,426	24,381,842	10,904,466	25,567,235

The total production of oven coke in 1908 was approximately 865,257 short tons, valued at $3,668,974, being an increase of about 3 per cent over the quantity produced in 1907. The coke was made in the province of Nova Scotia, Alberta and British Columbia and entirely from Canadian coal. At the end of the year there were in Nova

* No production reported.

Scotia about 659 ovens in operation and 173 idle, and in Alberta and British Columbia on the same date 916 in operation and 528 idle, not including the ovens at Hosmer and Comox in British Columbia, from which no returns have yet been received.

Petroleum and Natural Gas.—The production of crude petroleum is as usual practically all derived from the Ontario peninsula. Direct returns from the producers have not been obtained, but the production has been estimated on the basis of the bounty of 1½ cents per gallon paid by the Dominion government. The total bounty paid in 1908 was $277,193.21, representing a production of 527,987 barrels, compared with a bounty of $414,157.89 paid in 1907 representing a production of 788,872 barrels. A decreased production of 33 per cent is, therefore, shown.

Natural gas was produced in the counties of Welland, Haldimand, Norfolk, Kent, Essex and Bruce, in Ontario, and at Medicine Hat, Alberta; the sales from the Ontario fields constituting over 95 per cent of the total.

The total receipts from gas sold in 1908 show an increase of about 24 per cent over the receipts of 1907 and are now larger than at any time since the gas was first used.

Portland Cement.—Complete statistics of cement production in 1908 have been received from twenty-three operating plants.

The total quantity of cement made was 3,495,961 barrels, as compared with a total 2,491,513 barrels made in 1907, showing an increase of 1,004,448 barrels or over 40 per cent.

The total sales were 2,665,289 barrels, as compared with 2,436,093 barrels in 1907: an increase of 229,196 barrels or over 7 per cent. The total daily capacity of the 23 plants was about 27,500 barrels, as compared with an operating capacity of 14,300 barrels, 1907. The operating plants were distributed as follows:—One each in Nova Scotia, British Columbia and Manitoba, the latter manufacturing a natural Portland; two in Alberta; three in Quebec Province and 15 in Ontario.

Of the 23 operating plants, twelve use marl and clay, ten use limestone and clay, and one blast furnace slag.

Detailed statistics of production in 1907 and 1908 are as follows:—

—	1907.	1908.
	Barrels.	Barrels.
Portland cement sold	2,436,093	2,665,289
" manufactured	2,491,513	3,495,961
Stock on hand, January 1	299,015	383,349
" " December 31	354,435	1,214,011
Value of cement sold	$3,777,328	$3,709,063
Wages paid	956,080	1,274,638
Men employed	1,786	3,029

The average price per barrel at the works in 1908 was $1.39, as compared with $1.55 in 1907.

The imports of Portland cement into Canada during the 12 months ending November 1908 were 1,600,934 cwt. valued at $530,209.

This is equivalent to 457,408 barrels of 350 pounds at an average price per barrel of $1.16. The imports in 1907 were equivalent to 672,630 barrels valued at $837,520 or an average price per barrel of $1.24½. The duty is 12½ cents per hundred pounds.

There is very little cement exported from Canada; the consumption is, therefore, practically represented by the Canadian sales together with the imports.

Following is an estimate of the Canadian consumption of Portland cement for the past five years:—

Year.	Canadian.	Imported.	Total.
	Barrels.	Barrels.	Barrels.
1904	910,358	784,630	1,694,988
1905	1,346,548	917,558	2,264,106
1906	2,119,764	694,503	2,814,267
1907	2,436,093	672,630	3,108,720
1908	2,665,289	457,408	3,122,697

(Continued.)

SESSIONAL PAPER No. 26a

Exports of the Products of the Mine, Year 1908.

(Compiled from Trade and Navigation Monthly Statements.)

Products.	Quantity.	Value.
		$
Arsenic.....Lbs.	1,913,732	43,493
Asbestos.....Tons.	61,210	1,842,763
Barytes.....Cwt.	3,509	13,690
Chromite.....Tons.	4,571	56,864
Coal..... "	1,729,833	4,661,377
Feldspar..... "	9,524	34,045
Gold.....	.....	7,740,918
Gypsum.....Tons.	280,091	324,574
Copper, fine in ore, etc.....Lbs.	51,136,371	5,934,559
Lead, in ore, etc..... "	4,511,931	153,394
" pig, etc..... "	13,942,663	469,06
Nickel, in ore, etc..... "	19,419,893	1,866,624
Silver, in ore, etc.....Ozs.	20,884,451	12,403.482
Platinum, in ore concentrates, etc..... "	43	937
Mica.....Lbs.	580,195	198,839
Mineral pigments..... "	249,635	4,850
Mineral water.....Gals.	8,953	3,659
Oil, refined..... "	25	296
Ores—		
Antimony.....Tons.	149	5,647
Iron..... "	4,334	72,260
Other ores..... "	13,910	509,779
Phosphate..... "	1	30
Plumbago.....Cwt.	7,706	10,159
Pyrites.....Tons.	17,283	96,600
Salt.....Lbs.	527,229	3,840
Sand and gravel.....Tons.	298,954	161,387
Slate..... "	10,709	2,539
Stone, ornamental..... "	1,314	28,777
" building..... "	4,009	14,034
" for manufacture of grindstones..... "	661	5,991
Other products of the mine.....	.....	176,007
Manufactures—		
Bricks.....M.	2,334	9,047
Aluminium, in bars, etc.....Cwt.	194,546	399,785
" manufactured.....	.....	1,727
Cement.....	.....	34,591
Clay, manufactures of.....	.....	92
Coke.....Tons.	58,708	248,759
Grindstones, manufactured.....	.....	13,730
Gypsum, ground.....	.....	9,765
Iron and steel—		
Stoves.....No.	651	8,258
Castings, N.E.S.....	.....	28,062
Pig iron.....Tons.	290	10,614
Machinery (linotype machines).....	.....	126,090
" N.E.S.....	.....	285,257
Sewing machines.....No.	9,697	109,002
Typewriters..... "	3,720	169,939
Scrap iron and steel.....Cwt.	92,566	73,807
Hardware (tools, etc.).....	.....	57,631
" (N.E.S.).....	.....	59,304
Steel and manufactures of.....	.....	1,169,673
Lime.....	.....	43,316
Metals, N.O.P.....	.....	65,360
Plumbago, manufactures of.....	.....	876
Stone, ornamental.....	.....	13,748
" building.....	.....	1,446

CANADA

DEPARTMENT OF MINES

MINES BRANCH

Hon. W. Templeman, Minister; A. P. Low, LL.D., Deputy Minister;
Eugene Haanel, Ph.D., Director.

REPORTS AND MAGNETOMETRIC SURVEY MAPS OF ECONOMIC INTEREST

PUBLISHED BY THE

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2. Great Landslide at Frank, Alta. Report on—by R. G. McConnell and R. W. Brock, M.A., 1903.
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23. Iron Ore Deposits along the Ottawa (Quebec side) and Gatineau rivers. Report on—by Fritz Cirkel, M.E.
25. The Tungsten Ores of Canada. Report on—by Dr. T. L. Walker.
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6. Magnetometric Survey of Calabogie mine, Bagot township, Renfrew county. Vertical Intensity—by E. Nyström, M.E., 1904.
13. Magnetometric Survey of the Belmont Iron mines, Belmont township, Peterborough county, Ontario—by B. F. Haanel, B.Sc., 1905.
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Magnetometric Survey Lot 7 A, Range 5, Leeds township, Quebec—by B. F. Haanel, B.Sc.

Magnetometric Survey of Several Iron Ore Deposits along the Central Ontario railway—by Howells Fréchette, M.Sc.

Magnetometric Survey of Some Iron Ore Occurrences in British Columbia—by Einar Lindeman, M.E.

Note.—All applications for Reports, or Maps issued by the Mines Branch of the Department of Mines, should be addressed to

EUGENE HAANEL, Ph.D.,
Director of Mines,
Ottawa.

DOMINION OF CANADA

ANNUAL REPORT

OF THE

DEPARTMENT OF INDIAN AFFAIRS

FOR THE

YEAR ENDED MARCH 31

1908

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1908

[No. 27—1908.]

To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, Viscount Howick, Baron Grey of Howick, in the County of Northumberland, in the Peerage of the United Kingdom, and a Baronet; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Knight Grand Cross of the Royal Victorian Order, &c., &c., Governor General and Commander-in-Chief of the Dominion of Canada.

MAY IT PLEASE YOUR EXCELLENCY:—

The undersigned has the honour to present to Your Excellency the Annual Report of the Department of Indian Affairs for the fiscal year ended March 31, 1908.

Respectfully submitted,

FRANK OLIVER,
Superintendent General of Indian Affairs.

OTTAWA, September 2, 1908.

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REPORT

OF THE

DEPARTMENT OF INDIAN AFFAIRS

FOR THE YEAR ENDED MARCH 31, 1908

OTTAWA, September 1, 1908.

The Honourable FRANK OLIVER,
Superintendent General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the report of the Department of Indian Affairs for the year ended March 31, 1908, and for detailed information to refer you to reports of the various officials and agents, as well as to the statistical statements herewith presented.

GENERAL.

In last year's report the necessity was pointed out for remembering that in consequence of the change in the limitations of the fiscal year the comparison of achievements described with those of the preceding year was of a term of nine months with one of twelve months.

This year it has to be noticed that, as the review embraces the full fiscal year, comparison is of operations during twelve with those of the preceding nine months.

In some important directions such as agricultural operations the season being equally embraced within either period, the value of the comparison is not appreciably affected, but in others such as with regard to the earning of wages and the results from various industries, the consideration is more material.

Bearing this in mind, it will become apparent as various operations are disclosed, that while there has been much to afford ground for satisfaction and gratitude, none the less the general prosperity of the Indians whether affected by natural causes, or economic conditions, has failed to reach its full annual average for recent years.

The most satisfactory and encouraging feature of the situation is the demonstration of the possession by the Indians of a spirit of independence and of sufficient self-reliance to enable them to hold their own under comparatively difficult conditions.

Much and indeed most of the progress made in the civilization and improvement of the department's wards is necessarily so gradual that it is seldom possible to point to any considerable accomplishment in the course of any single year, and to appreciate this requires the consideration of accumulated results during more extended periods, and in no direction is this more true than with regard to the inculcation of the spirit and habits of industry.

To show what has been and is being quietly but persistently effected in this direction, it may be interesting and instructive to consider a few facts regarding the progress in the past and more particularly during the last decade.

When the Indians of Manitoba and the west came into treaty relations with the government many had in part been largely, and the remainder wholly, deprived of the natural resources upon which they had formerly subsisted, the main factor in producing which condition was the sudden and complete disappearance of the buffalo; and the task which confronted the government was that of converting helpless and ignorant savages into civilized and industrious members of the commonwealth.

The policy adopted was that of affording just sufficient help necessary to enable the Indians to help themselves.

In the earlier years the cost of doing this was necessarily very considerable, and as recently as twenty years ago the destitute vote for the year aggregated some $372,000.

Ten years ago, i.e., by the year 1897-8, this had been reduced to $182,700 or to something but little short of one-half.

For the past year, viz., 1907-8, a further reduction of the vote to $143,000 had been effected notwithstanding the inclusion of the requirements of some 10,000 Indians, in their aboriginal condition, recently brought under the government's direct care by the formation of Treaty No. 8.

To extend the examination somewhat further it may be stated that upon a group of reserves, until recently within the Northwest Territories, but now in the provinces of Saskatchewan and Alberta, there has been effected within the last decade the following enormous reduction in the annual issue of flour, beef and bacon, the three main staples of food-supplies to the Indians, as a direct consequence of teaching them to provide for their own requirements, viz.:—1,952,453 pounds of the combined commodities mentioned, and the aggregate annual destitute expenditure upon these reserves during the same period has been reduced to the extent of $82,235.

Relative to the group of reserves selected for illustration, it is worthy of notice that conditions which have prevailed have been normal, the Indians not having had any fortuitous sources for the improvement of their circumstances, independent of their own exertions.

It is true that in the natural course of events certain beneficial changes have attended increasing settlement, as for example better facilities for marketing produce

and labour and for other industrial effort, but the fact remains that had not the spirit of independence been inculcated and every advantage taken of available means and opportunity, these Indians would with perhaps few exceptions, have remained largely dependent upon the government, and paupers, dangerous, instead of, as now, a source of benefit to the commonwealth.

Without pursuing the subject to unnecessary length it may be noticed that no proper interest has been sacrificed to an undue desire to economize, in proof of which may be cited the fact that within the district under consideration the expenditure upon furnishing medical assistance and medicines has been increased during the decade by some $5,625.

To further illustrate the up-to-date character as well as the extent of the progress in agricultural industry a few extracts from a monthly report from the agent for the Bloods may be quoted.

It may be recalled that these Indians were among the most warlike and averse to industrial occupation, and situated in a district the inimical character of which to agriculture is only now being overcome by means of irrigation, and moreover that they obstinately refused for many years to accept cattle from the government, lest so doing might lead to their being expected to provide for their own beef-supplies.

The agent reporting for August, 1907, wrote *inter alia*:—

'On the 14th four of the Indian farmers who had finished the preparation of their land in July, began seeding their farms with fall wheat, while the rest of the farmers kept nine disc harrows busy preparing their farms for seed. As soon as one Indian finished seeding, another would take over his drill, so that our four single disc drills were kept in continuous operation during the course of the work. Running Antelope finished seeding his forty acres on the 18th, and the wheat was up in plain view on the 22nd. [Then follows a list of twelve Indians who had sown 40 acres and two who had sown 60 acres each]. The two last-named finished drilling to-day, thus completing the six hundred acres of winter wheat which represents the initial attempt to make farmers of Blood Indians. On each of these farms is a ten acre field broken for seeding oats next spring, so that each of the above forty-acre men will really have a fifty-acre crop to handle next year.'

It may be mentioned that the work just described was done absolutely without cost to the department, the Indians having purchased their own farming implements.

With regard to sociologic conditions the feature which has attracted most attention has been a certain recrudescence of the sun dance among some of the western bands.

The policy of the department in this and kindred directions has been to confine prohibitive legislation to the repression of the most conspicuously objectionable features of what was deemed objectionable and to trust as far as possible to the influence of Christian civilization to engender a public feeling on the reserves hostile to such celebrations, and thus lead to their voluntary abandonment.

To this partial and temporary revival the department does not incline to attach serious importance because it regards it as a spasmodic and expiring effort on the

part of the older generation and particularly the surviving medicine men to keep alive superstitions and customs which are doomed to complete disappearance in the near future, but naturally are dying hard.

Mention was made last year of the fact that a new treaty, to be known as No. 10, was in course of negotiation, and its successful completion has now to be recorded.

The area affected comprises some 85,800 square miles in the provinces of Alberta and Saskatchewan, which had not been included in Treaty No. 8.

The territory lies between Treaty No. 8 and the eastern boundary of the province of Saskatchewan, and between Treaties Nos. 5 and 6 to the south and the 60th parallel of latitude to the north. The aggregate number of Indians received was 730 and the terms were the same as those which governed the negotiation of Treaty No. 8.

For the first time the department sent an officer for the purpose of studying conditions among the Indians in the north, in the MacKenzie River district.

Although the department has no direct guardianship of these Indians, humanitarian considerations had induced it to alleviate actual distress which it might hear of as existing among them, but in doing this it felt that it was acting to some extent in the dark.

The inspector visited Fort Providence, Fort Simpson, Fort Wrigley, Fort Norman, Fort Good Hope, the Arctic Red River, Piel's River, Fort McPherson, Fort Roy, and secured information about other points which could not conveniently be reached.

On the whole the Indians were found to be in a somewhat unenviable plight in consequence of the scarcity of game and fur, upon which they are pretty well dependent, during the preceding season, and with a good deal of sickness prevalent among them, but it is hoped that with the information acquired, it will be possible in future to more intelligently guard against unmerited and undue suffering upon their part at any time.

VITAL STATISTICS.

The following tables will furnish the vital statistics for the year; the first giving the number of births and deaths by provinces with the respective gains and losses to the population, and the second showing the aggregate population throughout the Dominion at the close as compared with the beginning of the fiscal year.

Province.	Births.	Deaths.	Gain.	Loss.
Ontario	532	582		50
Quebec	318	202	116	
Nova Scotia	88	66	22	
New Brunswick	82	46	36	
Prince Edward Island	7	18		11
British Columbia	726	903		177
Manitoba	291	276	15	
Saskatchewan	266	232	34	
Alberta	163	188		25
	2,473	2,513	223	263
				223
Net decrease				40

Province.	March 31, 1907.	March 31, 1908.	Increase.	Decrease.
Ontario	23,783	23,518		265
Quebec	11,380	11,469	89	
Nova Scotia	2,114	2,129	15	
New Brunswick	1,764	1,861	97	
Prince Edward Island	288	276		12
British Columbia	25,092	24,964		128
Manitoba	8,445	8,595	150	
Saskatchewan	7,471	7,496	25	
Alberta	5,561	5,529		32
North West Territories, inside treaty limits	3,962	4,212	250	
North West Territories, outside treaty limits	17,183	16,854		329
Yukon Territory	3,302	3,302		
	110,345	110,205	626	766
				626
Net decrease				140

It will be observed that the comparison of the number of births with that of deaths leaves a net decrease of 40, which does not contrast favourably with the net increase of 169 from the same source during the preceding nine months.

This as will be noticed results more from an increased death than from a reduced birth rate.

No fault can be found under normal conditions with the fecundity of the Indians as a race, the birth rate among them being, if anything, somewhat higher than for the rest of the Dominion, but the trouble is that the death rate is not far short of being twice as heavy, a large proportion occurring among infants.

Nor will the first effects of contact with civilization by any means fully explain this heavy mortality, because the statistics upon which the conclusion is based are gathered among Indians who have largely been under the conditions of civilization sufficiently long to have overcome in great measure the early inimical influences.

There seems no way of avoiding the conclusion that the comparatively heavy mortality is directly attributable to the prevalence of tuberculosis in the race, which

in some form or other must be held responsible, directly or indirectly, for something like forty per cent of the premature deaths, and until means can be found for effectively checking this scourge the numerical growth of the native population must necessarily be very slow.

The net decrease in the aggregate population for the whole Dominion, so far as reliable statistics can be secured, is 140, but the number beyond what has just been under discussion is of no significance, being the result of an ever existing fluctuation for the most part between the Dominion and the United States.

HEALTH.

In Ontario there were some cases of small-pox at Belleville, Delaware and Walpole Island, of whooping-cough at Delaware, and of measles at Fort Frances and Kenora, and of influenza at the last mentioned place, also of influenza at Maniwaki and Bersimis in Quebec, and in New Brunswick, and in Antigonish and Victoria counties, Nova Scotia, together with measles in Shelbourne and Hants counties in the same province.

In Manitoba there was a severe outbreak of diphtheria at Norway House, and another which was promptly stamped out, at Fort Frances. Influenza was epidemic at Berens River and Manitowapah, as was measles at the Pas and Manitou Rapids in the Fort Frances district and at Manitowapah in the vicinity of Portage la Prairie.

In Alberta there was some whooping-cough prevalent during the winter in the Edmonton district, and influenza in the Hobbema vicinity.

In Saskatchewan there were outbreaks of measles in the Round Lake boarding school and in the Pelly district; whooping-cough at Kutawa, Moose Mountain and Carlton; small-pox at Onion Lake, and scarlet fever at Fishing Lake in the Kutawa agency.

In British Columbia influenza or grippe was prevalent in the Kootenay region; measles was epidemic in the West Coast, Fraser River and Kwawkewlth agencies, at the last mentioned in a virulent form.

With the foregoing exceptions the provinces were singularly free from anything in the form of epidemic, and the general health was quite equal to the average.

There was, however, and probably largely in consequence of the character of the winter season, an unusual prevalence throughout all the agencies of diseases more or less nearly allied with tuberculosis, such as pneumonia, congestion of the lungs, bronchitis and so forth, much of which supervened upon measles.

At Manitowapah alone measles was responsible for some twenty-five deaths, which means that from ignorance and carelessness other fatal maladies supervened during convalescence, which goes far to account for the increased mortality shown in connection with vital statistics.

With regard to tuberculous disease, the efforts of the department have in the past necessarily been much confined to prophylactic measures, and have consisted in general improvement of the mode of life calculated to raise the vital powers and reduce the tendency to infection.

The greatest risk is without question from overcrowding into ill-ventilated dwellings.

While the class of dwelling is undoubtedly gradually improving in sympathy with the general amelioration of the circumstances of the Indians, there remains much room among the majority for still further betterment, and in the prairie provinces the matter is considerably affected by the comparative accessibility to building timber, while the question of procuring fire-wood and the necessity for economy in its use, have much to do with the admission of cold air for the purpose of ventilation.

A commencement has been made of more aggressive measures wherewith to attack tubercular and scrofulous ravages, by the institution of tent hospitals, the experimental introduction of which at some suitable points was noticed last year.

These have been successful beyond expectation, particularly with regard to the manner in which they seem to be growing into favour with the Indians, whose reluctance to segregation for hospital treatment seemed to threaten great difficulty in the accomplishment of anything in that direction.

AGRICULTURE.

The importance of agriculture in relation to Indians has to be considered in various aspects, of which the main are the production of fixity of abode, which is the first and essential step towards any form of civilization, then the furnishing of a means for the acquisition of habits of industry, and finally as a permanent occupation and source of maintenance.

In so far as concerns the two first mentioned, it has effectively answered its purposes, although its services may have to be called into further requisition with regard to the new treaties made within the last few years.

There has been on the whole some curtailment of the area put under cultivation, which was doubtless in sympathy with the exceptional activity in other industrial directions throughout the country during the preceding years, which offered so much employment more congenial to many.

There is a natural tendency in the prairie provinces to shrinkage in the area as the Indians learn what is a somewhat difficult lesson where such an extent of land lies ready for the plough, viz., to confine the scope of their operations and improve their methods of husbandry.

The main factors tending to increase the aggregate area are the recruiting of the ranks of the farmers from Indians who so far have preferred to prosecute their natural resources, and that is in turn chiefly affected by the gradual disappearance of game and fur before the advance of settlement.

The importance of agriculture as an industrial pursuit and the extent to which it is pursued in the various provinces will be readily recognized by a glance at the following statement:—

Province.	Land cropped.	Population.	Grain and roots.	Hay.	Value.	
	Acres.	—	Bush.	Tons.	$	cts.
Ontario	17,148	23,518	504,904	24,915	470,198	95
Quebec	4,646½	11,469	108,094¼	7,306	164,091	00
Nova Scotia	262	2,129	9,341	933	15,433	00
New Brunswick	491	1,861	12,866½	276	7,295	50
Prince Edward Island	44¾	276	1,742	56	1,312	80
British Columbia	9,633	24,964	391,993	13,948	324,828	00
Manitoba	5,294½	8,595	100,907	16,170	93,187	68
Saskatchewan	9,217½	7,496	150,572½	36,073	136,023	70
Alberta	2,193¾	5,529	54,801	18,657	66,760	40
	48,931	85,437	1,335,221¼	118,334	1,279,131	03
Totals, 1907	52,256	.....	1,627,883	120,891	1,347,948	00
Decrease	3,325	.....	292,661¾	2,557	58,816	97

It will be seen that as compared with the year before there has been a decrease in the quantity of products, although fortunately that has been offset to some extent by the prevalence of good market prices.

In Ontario, with the exception of a few localities the spring was late and inclined to be cold and wet, nor was there any such improvement of conditions during the season for growth and maturing of crops as to counteract the effects of the retarding influences at the start, but in this province such good prices prevailed that despite the deficiency of products, the value realized surpassed that for the preceding year by some $40,500.

In Quebec the spring was as a rule a good deal more favourable, but a somewhat excessive rain-fall interfered with the maturing and harvesting of the crops to an extent which so reduced the quantity of products that despite good markets, the aggregate value was reduced by some $2,500.

In the maritime provinces the season throughout was by no means propitious, but the extent of farming is so limited as to make the matter of comparatively little consequence, and in any case with the exception of New Brunswick the prices secured more than counterbalanced the deficiency.

It was, however, in the prairie provinces that the effects of unpropitious conditions were most felt. A cold, late spring, lack of summer heat, and early frost all contributed to deprive the farmers of their usually abundant recompense for their labours, and a somewhat serious reduction of products and of revenue was experienced throughout.

In part of the farming districts of British Columbia conditions were so favourable that the aggregate value of the crops was some $15,000 more than for the pre-

ceding year, despite the prevalence of backward spring weather and subsequent drought in some localities.

LIVE STOCK.

There is little of unusual importance or interest to notice with regard to live stock.

In Quebec and the maritime provinces but little is kept, and that as in Ontario, where the industry is much more important, as a branch of mixed farming and largely for dairy purposes.

In the prairie provinces the use of milk and the manufacture of butter are gradually becoming more extended among the Indians, but horned stock is raised to a large extent as a distinct industry.

So regarded it may be said to be approaching the limits of its potentialities in proportion as settlement occupies the vacant lands available in the past for pasturage and hay.

The direction in which the relief to the government and benefit to the owners from this industry have so far been most apparent has been by enabling the Indians to increasingly supply their own beef requirements

The value of beef consumed and sold during the year in the various provinces was as follows, viz.:—

Ontario	$48,917 05
Quebec	46,020 00
New Brunswick	5,400 00
Nova Scotia	1,450 00
Prince Edward Island	40 00
British Columbia	29,290 00
Manitoba	14,505 95
Saskatchewan	72,415 13
Alberta	29,259 57
Total, 1908	$247,297 70
Total, 1907	228,130 17
Increase	$19,167 53

In Ontario and Quebec the winter was, generally speaking, a severe and prolonged one, and although in some places the preceding hay-crop was plentiful, the weather to some extent interfered with curing, while in others the crop was decidedly light, and the price went up so high as to prove a strong temptation to the Indians to sell more than was prudent consistently with a regard to the needs of their own animals; however, despite these drawbacks, the cattle on the whole wintered fairly well.

In the maritime provinces although the crop was abundant, the season was not a favourable one for securing hay, but the winter was so mild and short that the little live stock kept, in no way suffered.

In the prairie provinces and in British Columbia there was as a rule an ample supply of grass, but in the former excessive moisture greatly impeded the efforts of the Indians to cure a sufficiency of hay, but as they were fortunate enough to have an unusually mild winter which permitted of the live stock grazing out much more than they can generally do, the quantity secured proved enough for the needs of the animals stabled, and the range cattle did exceptionally well.

The effort made to improve the breed of horses or ponies in the hands of the Indians, by the introduction of some good stallions to the reserve a year or two ago is proving a great success, and there are good prospects of these animals, which apparently served little purpose beyond consuming grass to the detriment of a more profitable kind of stock, eventually developing into a somewhat important source of revenue.

WAGES AND VARIOUS EARNINGS.

The Indians so generally intermingle their pursuits that nothing approaching exact classification is possible, but it is curious to notice how equally their aggregate revenue is furnished by each of the main classes of their avocations. Agriculture including live stock, produced during the year some $1,526,428, wages brought $1,660,211, and natural resources together with various minor manufactures closely connected therewith, realized $1,765,121.

The aggregate amounts derived from the sources were the following, viz.:—

Agriculture	$1,279,131
Beef	247,297
Wages	1,660,211
Various industries	666,249
Fishing	534,342
Hunting and trapping	564,530

The amounts respectively realized as wages and by various earnings were:—

Province.	Wages.	Various Industries.
	$ cts.	$ cts.
Ontario	527,200 05	125,440 00
Quebec	482,397 87	90,713 00
New Brunswick	55,150 00	24,950 00
Nova Scotia	26,400 00	33,115 00
Prince Edward Island	120 00	14,030 00
British Columbia	413,420 00	238,784 00
Manitoba	58,350 00	20,753 00
Saskatchewan	57,357 54	57,667 30
Alberta	39,816 00	60,796 24
Total, 1908	1,660,211 46	666,249 44
Total, 1907	1,659,398 00	714,125 00
Increase	813 46	
Decrease		47,875 56

The extent to which the Indians devote their attention to wage and miscellaneous earnings manifests a certain amount of fluctuation in sympathy with the condition of their other available industries, and increased activity in their direction becomes apparent if husbandry, or hunting, fishing or trapping for any reason decline.

Despite some increase as compared with the preceding nine months, wages have fallen somewhat short for a period of twelve months, but that need cause no surprise in view of the temporary reaction in the general activity of several preceding years.

The comparative decrease from various industries has been considerably greater, but that was a natural result of a certain scarcity of game and fur upon which many of the minor manufactures, such as of moccasins and mittens depend, and with regard to fancy articles, in which a considerable trade is done by a section of the Indians, financial conditions on both sides of the line considerably affected the movements of tourists and visitors to watering places, who provide the market for the class of wares referred to.

NATURAL RESOURCES.

Of all the avocations to which the Indians devote themselves, there is none which they prosecute with so much avidity as fishing, hunting and trapping, and the extent to which they do this is only limited by their environment and opportunity.

In old settled agricultural districts from which game has disappeared before the presence of civilization, the hereditary instinct has largely disappeared through desuetude, but long before this stage is reached farming is carried on as a mere adjunct to the pursuit of natural resources, until by degrees the relative positions become reversed and the chase becomes an adjunct to husbandry, until finally circumstances compel its abandonment, but the instinct is so strong that in the course of evolution from aboriginal hunters to civilized agriculturists, it is found futile to encourage the Indians to start farming so long as any prospect remains of the other pursuits affording even a scanty and precarious subsistence.

There are still on many of the reserves, where the chase has generally speaking been abandoned, a few old Indians who continue to go to considerable distances to indulge their preference, and there are farming bands which are within range and take full advantage of fisheries, but the bulk of those who depend upon fish, game and fur for their maintenance are to be found in Quebec along the lower St. Lawrence, along the north shore of Lake Huron and westward in Ontario, in the lake districts of Manitoba and Saskatchewan outside of the prairie region, and all through British Columbia, with the exception of somewhat limited agricultural areas in Fraser River, Babine, Kootenay, Williams Lake and Kamloops agencies.

Of course a proportion of these Indians eke out their resources by the cultivation of patches of potatoes, other roots and vegetables, and very considerably by the gathering of wild berries, while others find employment with fishing companies, lumberers, transport companies, and by acting as guides to tourists and explorers, but as already stated there is no such distinct cleavage of occupation among the majority as to admit of classification.

In Ontario the fishing season was a good one, and while game and fur were not very plentiful, prices were unusually high, and the Indians did very well.

In Quebec the fishing was not so good, nor was the quantity of game and fur up to the average supply, but the tendency to scarcity was more of game than of fur, and prices were encouraging.

In British Columbia the character of the salmon-run very much determines the question of the year's prosperity for the majority of the Indians, since they depend upon the salmon to furnish the main staple of their winter's food, and upon their earnings at the canneries for the purchase of other necessaries.

In the Fraser and Stickine rivers, and in the Kamloops-Okanagan district the runs were decidedly poor and in the Williams Lake agency a complete failure, but on the Skeena and Nass rivers and in the Kwawkewlth and Babine districts they were very much better.

Throughout the province game and fur were generally speaking far from plentiful, so that despite the prevalence of good prices the aggregate earnings from these sources, although not to the same extent as from the fisheries, fell considerably below what was expected from them.

In Manitoba the fishing was good and although game and fur were somewhat scarce, this was more than compensated for by the rates secured, but in Saskatchewan the Indians had not alone to contend with poor fishing, but so lacked success in finding game and fur that their revenue from that source was reduced by some $50,000 and although on a much smaller scale the experience in Alberta was much the same.

The following amounts show the value to the Indians in the various fisheries, game and fur, including the quantities for their domestic consumption:—

Province.	Fishing.	Hunting and Trapping.
	$ cts.	$ cts.
Ontario	78,898 25	113,738 00
Quebec	2,861 50	81,525 00
New Brunswick	10,605 00	7,025 00
Nova Scotia	5,775 00	6,790 00
Prince Edward Island	2,545 00	20 00
Manitoba	51,500 00	72,491 00
British Columbia	348,717 00	185,273 00
Saskatchewan	27,751 00	80,197 00
Alberta	5,690 00	17,471 00
Total, 1908	534,342 75	564,530 00
Total, 1907	544,487 00	630,633 00
Decrease	10,144 25	66,103 00

MORALITY.

With regard to moral and kindred sociological conditions the Indians of the older civilization are without doubt more fully absorbing the white man's ways of thought and standards of morality as the years go on, and have reached the state when such growth is so gradual as not to be likely to attract attention unless some radical change of policy, such for example as in the direction of enfranchisement on an extended scale, were to be adopted.

Bands as well as individuals greatly differ in intelligence and they are on the whole a peaceably disposed and law-abiding people, who pursue the even tenor of their way with comparatively few wants or cares, and without ambitions reaching further than the horizon of their reserves, fairly independent and honest, but more inclined to seek shelter behind than to endeavour to escape the disabilities imposed by class legislation, which points to the fact that such protective measures while very necessary at the earlier stages of contact with a stronger race, tend if continued in operation, to narrow the lines of their development.

Where Indians, as in the younger provinces, are at comparatively early stages of evolution, the phases are more marked, and one of these affecting a large number seems worthy of notice.

The department's policy has always been, as far as possible, to avoid excessive measures, and to trust to moral suasion and education to wean from objectionable habits and customs.

Increasing contact with civilization has largely corrected the vagueness of the Indians' information as to their legal rights and the powers of the law, and as hereinbefore shown they have in no small measure become independent of the department's assistance.

As a consequence it is no longer sufficient to forbid Indians to leave their reserves on objectionable excursions, such as attendance at sun-dances, or to take part in these demoralizing gatherings for exhibition purposes to which they are invited by local agricultural societies, or to order them to desist from bigamous or polygamous marriages on threat of deprivation of rations, and as a consequence the impression is apt to be created that in some directions there has been a relaxation of the department's discipline.

As a matter of fact, however, the department is just as vigilant as ever in the use of its available means, and entertains no doubt that a sufficient impression has been made to ensure the prevalence before long of an enlightened public sentiment among the communities referred to.

The most important feature of morality is that which concerns the use of intoxicants, not only on account of the immediate results, but because intemperance is the root of so many serious evils.

While it has to be admitted that there is in places far too much evasion of the law, it may be remarked that the consumption of liquor would probably have attracted little if any attention in communities not under prohibitive legislation and the fact remains that a large majority of the Indians entirely abstain from touching intoxicants.

To begin with, a considerable proportion are beyond the danger zone, and what is still more satisfactory is that there is a growing temperance sentiment among those to whom access is easy or worse still who have temptation thrust upon them.

Lack of public sympathy with what is regarded as class and by many as oppressive legislation greatly enhances the difficulty in strictly enforcing the provisions of the Indian Act framed with a view to keeping intoxicants out of the Indians' reach, and the large profits which accrue from the contraband traffic offer a strong incentive to unscrupulous dealers, and still more middlemen, to incur the risks involved. The greatest trouble in this regard has been with bands of hunting Indians, who while at a distance from observation and executive machinery for the enforcement of the law, are near water highways which facilitate the carriage of liquor to points convenient for rendezvous when they come in from their hunting fields, and again proximity to the boundary line affords ample opportunity for the illicit and nefarious traffic.

Of recent years the influx of settlement into the younger provinces has appreciably increased the number of bands brought within range of temptation, and in some places a good deal of mischief has resulted, but on the whole the department's efforts to prevent it have met with fair success.

During the fiscal year, in Manitoba successful prosecutions for infraction of the law resulted in the imposition of thirty-four fines, to an aggregate amount of $1,349 and three sentences of incarceration, while in Alberta fines in seventy-four cases, amounting to $1,919 and five imprisonments, and in Saskatchewan fifty-eight fines aggregating $1,915 in addition to sixteen terms of incarceration, rewarded efforts at repression, which together with other unsuccessful prosecutions furnish sufficient proof that the attitude of the department has been by no means supine.

A distinctly operative factor in improving sexual morality deserves mention, viz., the improvement quietly being made by the Indians in their dwellings, which is most noticeable in the younger provinces. The character of the houses which affects health and morals is more marked in some localities than in others, but wherever circumstances permit there is noticed a growing tendency in the direction of the subdivision of their dwellings into compartments, which encourages a seemly separation of and decent privacy between the sexes.

EDUCATION.

The number and classes of schools in operation during the year were the following:—

Province.	Class of School.			
	Day.	Boarding.	Industrial.	Total.
Ontario	80	4	5	89
Quebec	20			20
Nova Scotia	10			10
New Brunswick	6			6
Prince Edward Island	1			1
British Columbia	40	8	9	57
Manitoba	45	9	2	56
Saskatchewan	19	14	3	36
Alberta	8	19	3	30
Northwest Territories		3		3
Outside Treaty	7			7
Total	236	57	22	315

This, as compared with the preceding year, shows an increase of 10 day and 2 boarding schools, and the changes which occurred in the various provinces were the following:—

In Ontario a summer day school was established at Abitibi; a day school on the Lake Nipigon reserve at Grand Bay, and one for whites has been subsidized at Shannonville with a view to providing educational facilities for the children of the Tyendinaga reserve.

A day school which had been closed since 1904 was reopened at Mississagi River, on Manitoulin Island, and another which had been discontinued since 1900, at Stony Point in the Sarnia agency was reopened.

A new boarding school under the auspices of the Church of England was established at Chapleau.

In Quebec a summer day school was opened at Hunter's Point in the Timiskaming agency, and the attendance promises to justify keeping it in operation all the year round.

In British Columbia the day school at Hartley Bay on the northwest coast was discontinued and new ones established at Meanskinisht and Andimant in the Babine, at Telegraph Creek in the Cassiar, and at Lytton in the Kamloops-Okanagan agencies, respectively, and a grant was made to permit of Indian children attending the settlers' school at Penticton, in the last-mentioned agency.

In Manitoba day schools were closed at Frenchman's Head and Wabigoon, both in the Savanne agency, and a new one opened at Peguis on the St. Peter's reserve.

In Saskatchewan the day school at Lac la Ronge was discontinued in consequence of a boarding school having been established there during the preceding year.

In Alberta the grant formerly applied to the operation of a boarding school at Smoky River, which it is intended to close, has been devoted to the opening of one at Sturgeon Lake, in Treaty No. 8.

Within the Northwest Territories, but beyond treaty limits, a day school has been reopened at Nelson House, and another brought into operation at Split Rock.

The various religious denominations in connection with which the schools are conducted, and the number by each in the several provinces are as indicated in the following table:—

Province.	Undenominational.	Roman Catholic.	Church of England.	Methodist	Presbyterian.	Salvation Army.
Ontario	39	28	13	9	.....	.....
Quebec	3	13	1	3	.....	.....
Nova Scotia	.....	10	.....	.....	.....	.....
New Brunswick	.....	6	.....	.....	.....	.....
Prince Edward Island	.....	1	.....	.....	.....	.....
British Columbia	2	16	17	16	4	2
Manitoba	3	11	29	8	5	.....
Saskatchewan	1	10	18	.....	7	.....
Alberta	1	14	8	7	.....	.....
Northwest Territories	.....	2	1	.....	.....	.....
Outside Treaty	.....	.....	6	1	.....	.....
Total	49	111	93	44	16	2

The total enrolment for the year was 10,308 pupils, of whom 5,220 were boys and 5,088 girls, but the increase as compared with the enrolment for the preceding year is to be accounted for by the fact that the June quarter, which shows the greatest enrolment, was omitted from computation in 1907 on account of the change in the fiscal year.

The percentage of the average of total attendance was 62·58, a little lower than for the preceding year, during which it was 62·92.

The average of attendance ranged in the provinces all the way from 40·23 in Nova Scotia, to 90·19 in the Northwest Territories, and of course is highest in boarding and industrial schools, where the pupils are in residence with very little interruption.

The attitude of Indian parents towards education or perhaps more properly speaking, instruction for their children, continues to be very much regulated by the advantage they can perceive as being likely to accrue to them in contact with the dominant race, and those superstitious objections, based upon the fear of separation hereafter, as a consequence of education in different creeds, are fast disappearing.

The boarding and industrial schools of course continue to afford the two great advantages over the day schools, of preventing the retrogressive home influences which

pupils who are only at school for a few hours each day are exposed to, and of securing regularity of attendance, but these considerations are of importance in proportion to the extent of civilization, including the abandonment of nomadic habits acquired by the communitites concerned.

LANDS.

The large influx of settlement of recent years into the younger provinces has dictated a certain modification of the department's policy with relation to the sale of Indians' lands.

So long as no particular harm nor inconvenience accrued from the Indians' holding vacant lands out of proportion to their requirements, and no profitable disposition thereof was possible, the department firmly opposed any attempt to induce them to divest themselves of any part of their reserves.

Conditions, however, have changed and it is now recognized that where Indians are holding tracts of farming or timber lands beyond their possible requirements and by so doing seriously impeding the growth of settlement, and there is such demand as to ensure profitable sale, the product of which can be invested for the benefit of the Indians and relieve *pro tanto* the country of the burden of their maintenance, it is in the best interests of all concerned to encourage such sales.

The law renders it impossible to dispossess Indians of their lands without their full consent and surrender, and the department exercises all possible care to only allow such sales as are clearly for the benefit of the owners and then under conditions to ensure to them the greatest obtainable advantage.

The sales made of surrendered, surveyed lands during the past year aggregated 40,163·33 acres and realized the sum of $167,776.88. During the year 330 Crown grants were issued and recorded under authority of the provisions of the Indian Act.

The 500 acres of land on the Pas reserve on the Saskatchewan river, which were surrendered in August last, to be disposed of for the benefit of the Indians as a townplot, were subdivided into town lots, and the portion of the Cote reserve situate at Kamsack, which was surrendered by the Indians to be sold for their benefit, was subdivided into sections and quarter-sections, and it is proposed to hold auction sales thereof at an early date.

The Indians of the Little Bone band surrendered portions of their reserves, Nos. 73A and 74, in the province of Saskatchewan, situate at Leach lake, near Crescent City, containing an area of 6,976 acres, and a subdivision survey is being made in order to dispose of the same in accordance with the wishes of the Indians.

The Chippewa, Saulteaux and Cree Indians residing on the St. Peter's reserve in the province of Manitoba, surrendered their reserve, containing 48,000 acres, to the Crown on specified conditions, which included the patenting back to them of about one-half of the area, and giving them another tract on Lake Winnipeg, and all necessary action has been taken to give effect to the terms of the surrender.

The Indians of the Fishing Lake band, in the province of Saskatchewan, surrendered 13,170 acres of their reserve, No. 89, to be sold for their benefit, and action is being taken to have the land subdivided in order to give effect to the wishes of the Indians.

The Swan Lake band of Indians surrendered two parcels of land, comprising respectively 2,880 acres of their reserve No. 7 at Swan lake, in the province of Manitoba, and the whole of their reserve No. 7A, containing 2,403 acres, near the town of Battleford, in the province of Saskatchewan, with a view to the same being sold for their benefit, and the department is taking steps to have the lands subdivided by survey for that purpose.

A re-examination and revaluation of unsold islands in the Georgian bay having been deemed advisable, they were withdrawn from the market, while this was being done. In February last, the department placed the undisposed of islands again in the market.

The unsold lands on the Manitoulin Island and at Garden River and Batchawana Bay were withdrawn from the market pending a re-examination and revaluation thereof, as it was considered, in view of the increased value of the lands, that it was desirable to have this done in order to obtain the best prices possible in the interests of the Indians. A special examiner and valuator has been authorized to do this work, and is now engaged thereat.

The Metlakatla band of Tsimpsean Indians having surrendered 13,519 acres of their reserve on Kaien island, Digby island and a part of the mainland, to be disposed of for their benefit, the same was duly surveyed and sale thereof made to the Grand Trunk Pacific Town and Development Company, Limited, in June last, for the sum of $107,650.

MINERALS.

During the past year a few applications have been received for permission to explore for minerals, and a few mining permits in the Garden River, and Batchawna Bay districts have been issued.

LOCATION TICKETS.

Location tickets, granting title under the provisions of the Indian Act to individual Indians for their lands on their reserves, were issued during the past year to the number of 47, and on March 31, last, there were current 1,500 location tickets.

LEASES.

Under the provisions of section 11 of the Regulations, leases were issued to white men, at the request of Indian locatees, to the number of 74.

On March 31, last, there were 1,136 leases current.

TIMBER LICENSES.

Licenses renewed and in force	28
Licenses not renewed	3
Berths vacant	8

The pine timber on the Dokis reserve, French river, has been surrendered for sale.

SURVEYS.

The following surveys were made during the fiscal year ending March 31, 1908.

Nova Scotia.

The resurvey of the boundaries of the Cariboo Marsh reserve near Sydney, C.B., of the Sydney reserve.

New Brunswick.

The survey of a proposed addition to the Eel River reserve, Restigouche county.

Quebec.

The survey of the Caughnawaga village and common, county of Laprairie, has been completed.

The survey of the southwest half of the Doncaster reserve, county of Montcalm, into lots for Indian occupation.

The survey into lots of an additional portion (Concession VIII.) of the Maniwaki reserve, county of Ottawa, for Indian occupation.

Ontario.

A part of the northern limits of the shoals and marshes adjacent to the south end of Walpole island, Lake St. Clair, and the division between two of the leases were defined and surveyed.

The unsold islands in Georgian bay, south of Moose Deer Point, were revalued and a number of the larger islands were subdivided into convenient lots for pleasure purposes, to be sold.

The surrendered portion of the Nipissing reserve has been divided into lots for sale.

The Stangecoming reserve, No. 16D, Rainy lake, has been surveyed and the limit which was not surveyed in the original survey, finally defined.

A survey has been made in Stony and Clear lakes in the county of Peterborough, to ascertain what portions of land have been made into islands artificially by the raising of the level of the water in the said lakes.

The boundaries of the agency reserve at Fort Frances and the land assigned for the use of the Indian boarding school have been surveyed.

Two small reserves at Chapleau have been surveyed for Indians of Treaty No. 9.

Manitoba.

The boundaries of the Long Plain reserve, No. 6, and the Rolling River reserve, No. 67, were retraced.

The boundaries of the Waywayseecappo reserve, No. 62, were retraced and about one-half of the reserve subdivided into quarter-sections for Indian occupation.

Nearly the whole of the Riding Mountain reserve, No. 61, has been subdivided into Indian holdings corresponding as nearly as possible with the regular sectional system.

The hay-lands for the Elkhorn industrial school were surveyed, also a line of levels run to ascertain the practicability of draining a proposed septic tank at the institution.

The boundaries were defined on the ground of the Clear Lake reserve, No. 61A.

Saskatchewan.

A survey to exclude the land occupied by the Roman Catholic mission from the Cold Lake reserve, No. 149, was made and a small addition to the said reserve was surveyed.

The surrendered portions of the Kakewistahaw and Cowessess reserves, Nos. 72 and 73 (near Broadview) were subdivided for sale.

A number of lots were laid out for Indian occupation in the Mistawasis reserve, No. 103.

A small reserve numbered 121A was surveyed at Frog lake for the Indians of reserve No. 121 in exchange for a portion of equal area cut off the said reserve No. 121. Similarly a small addition was surveyed for the Big River Indians (reserve No. 118) and an equal area cut off their reserve.

The boundaries of the Meadow Lake reserve, No. 105, were retraced.

The boundaries of the land assigned to the use of the Battleford Indian industrial school were defined.

Northwest Territories.

A block of 500 acres at the north end of block A, Pas reserve, which had been surrendered has been subdivided into town lots, for sale.

British Columbia.

Three small points of land in the Fraser river used from time immemorial by the Hope Indians as fishing stations, were surveyed for them.

Reserves Nos. 4A, 5, 10, 11, 11A, 12, 13, 14 and 15 of the Cook's Ferry group, were surveyed.

The survey was made of the Bonaparte reserve, No. 3.

Dyking operations required at the St. Mary's reserve and at Chilliwack on the Fraser river, were conducted under the superintendence of a surveyor of the department.

Yukon.

A small plot of timbered land was laid out as an additional reserve for the Moosehide Indians.

FINANCIAL.

At the close of the fiscal year the capital of the Indian trust fund, which at the beginning thereof amounted to $5,157,566.59, had increased to $5,181,090.41.

The balance sheet of this fund will be found on page 166, Part II.

The amount expended from the consolidated revenue fund voted by parliament for the purposes of the department, was $1,276,963.72.

On March 31, last, the balance to the credit of the Indian savings account for the funding of the annuities and earnings of pupils at industrial schools, together with collections from Indians for purchase of cattle and for ranching expenses, was $52,692.43. Deposits and interest during the year aggregated $25,135.51, and withdrawals $24,152.

I have the honour to be, sir,
Your obedient servant,

FRANK PEDLEY,
Deputy Superintendent General of Indian Affairs.

REPORT OF FIRST COMMISSIONER FOR TREATY No. 10.

OTTAWA, January 18, 1907.

The Hon. FRANK OLIVER,
Superintendent General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit herewith the treaty which, under the commission issued to me July 20, 1906, I made with the Chipewyan Indians of English River and Clear Lake and the Crees of Canoe Lake, in the northern part of Saskatchewan.

The arrangements which I made for meeting the Indians, of which they were advised, provided that the first meeting was to be at Portage la Loche on September 3, but unfavourable weather and the action of the Indians themselves made it impossible to carry out my programme.

On reaching Isle à la Crosse on August 26, en route to Portage la Loche, I found that all the Chipewyans from English River and some ten families from Clear Lake were gathered there, waiting for the commission, which was announced to be at that point on September 13. These Indians urged strongly that they be treated with at once, on the ground that they had been gathered there for several days, that their supplies were getting low, that it was necessary that they should return to their hunting grounds without further delay, that they had come long distances, and that they would have to travel far before reaching their winter quarters.

I decided to accede to their request, and met them on August 28, 1906.

It appeared for a time as if there would be some considerable difficulty in effecting a settlement on the lines of the treaty, for it was evident from the trend of the talk of the leaders among the Indians that there had been at work an influence which tended to make them regard the treaty as a means of enslaving them. I was able to disabuse their minds of this absurd notion and to make it clear that the government's object was simply to do for them what had been done for neighbouring Indians when the progress of trade or settlement began to interfere with the untrammelled exercise of their aboriginal privileges as hunters.

By the end of the day, the treaty was signed and the annuity and gratuity moneys paid.

The number of Indians paid at this point was:—

2	chiefs at $32	$ 64 00
2	headmen at $22	44 00
195	other Indians at $12	2,340 00
199		$2,448 00

The chief of the Clear Lake band, who was empowered to speak for his people, requested that the remainder of the band be paid at Buffalo Narrows, where they would gather to meet me on the return journey from Portage la Loche.

After treating with these Indians, I left Isle à la Crosse on August 30 for Portage la Loche, at which point I was due on September 3; but for the reasons given above, I did not reach there until the 5th.

The people at this point were all half-breeds and were dealt with as such.

On the 8th of the same month, I left for la Loche mission, across la Loche lake, a distance of nine miles, where more half-breeds had to be met and dealt with. There were at this point three aged Chipewyan women who desired to be attached to the Clear Lake band, and I entered them as members and paid them treaty.

Having completed my work at la Loche mission on the 11th, I started on my return journey to Isle à la Crosse, reaching Buffalo Narrows on the evening of the 16th.. The chief of the Clear Lake band and those of his people who had not yet been paid treaty were gathered here. I met them the following day; found them satisfied with the action of their chief in becoming a party to the treaty, and paid the gratuity and annuity.

The number of Indians paid at this point, including three members of the band at Bull's House, was:—110 Indians at $12, $1,320.

At the request of the chief, the appointment of headmen was deferred until next treaty payments, as the Indians were not then prepared to make their selections.

After completing the work at Buffalo Narrows, I pushed on to Isle à la Crosse, a distance of fifty-five miles, arriving there the same night. I met the Cree Indians of Canoe lake the next day and explained to them all the stipulations contained in the treaty. I secured their adhesion on September 19.

The number of this band is eighty-two, consisting of one chief, two headmen and seventy-nine other Indians; the amount paid was $1,024.

The next point of destination was Stanley, where I was scheduled to meet the Indians on October 8; but between my leaving and returning to Isle à la Crosse a report came to the Hudson's Bay Company to the effect that the streams were very shallow and that travel would, therefore, be so very difficult and slow that in all probability our party would be frozen in and would have to remain at Stanley until dog trains could be procured. This report was quite confirmed by the information which Messrs. Revillon Freres had from that part of the country, and of which their manager, Monsieur Benard, very kindly apprised me. From the report it also appeared that, even if we made the trip, it would be impossible for the Indians from the northeastern portion of the country to be gathered there, and that there were at Stanley and in its immediate vicinity only a few half-breed families who had had their claims settled before they migrated to that region. I therefore decided to cancel the appointment, and sent notice to that effect to the people, assuring them at the same time that they would be visited at a future date, of which they would be duly notified.

As the discussions which took place with the bands treated with were much on the same lines, I shall confine myself to a general statement of their import.

There was a marked absence of the old Indian style of oratory, the Indians confining themselves to asking questions and making brief arguments. They all demanded even more liberal terms than were granted to Indians treated with in past years, the chief of the English River band going so far as to claim payment of 'arrears' from the year when the first treaty was made; some expected to be entirely fed by the government, after the making of the treaty; all asked for assistance in seasons of distress; and it was strongly urged that the old and indigent who were no longer able to hunt and trap and were consequently often in destitute circumstances, should be cared for by the government.

There was a general expression of fear that the making of the treaty would be followed by the curtailment of their hunting and fishing privileges, and the necessity of not allowing the lakes and the rivers to be monopolized or depleted by commercial fishing was emphasized.

There was evidenced a marked desire to secure educational privileges for their children. In this connection and speaking for the Indians generally, the chief of the English River band insisted that in the carrying out of the government's Indian educational policy among them there should be no interference with the system of religious schools now conducted by the mission, but that public aid should be given for improvement and extension along the lines already followed.

The chief of the Canoe Lake band stated that there were about twenty-five children of school age in his band, and asked that a day school be established at Canoe Lake for their benefit and that it be put under the management of a woman teacher.

There was also a demand made for a few head of cattle to be given to those of the Indians who wished to go into the industry of stock-raising.

The Indians all agreed to have one place of payment in the future; but made it a condition that the payments should be held about the middle of June of each year, as that is the only time at which the gathering for annuity payments would not interfere with their avocations to an extent that the payment would be no adequate compensation for. They selected Isle à la Crosse as the place of payment.

They further requested that medicines be furnished, and made an earnest appeal for the appointment of a resident medical man.

In my reply I convinced them that such a claim as they put forward for what they called 'arrears' had never before been heard of, and that I could not for a moment recognize any obligation on the government's part except such as would be put upon it in virtue of the execution of the treaty. I pointed out to them that the government could not undertake to maintain Indians in idleness; that the same means of earning a livelihood would continue after the treaty was made as existed before it; and that Indians would be expected to make as good use of them in the future as in the past. I stated that the government was always ready to assist Indians in actual destitution; that in times of distress they would,without any special stipulation in the treaty, receive such assistance as it was usual to give in order to prevent starvation among them, and that the attention of the government would be called to the necessity of some special provision being made for assisting the old and indigent who were unable to work and dependent on charity for subsistence.

I guaranteed that the treaty would not lead to any forced interference with their mode of life. I explained to them that, whether treaty was made or not, they were subject to the law, bound to obey it and liable to punishment for any infringement thereof; that it was designed for the protection of all and must be respected by all the inhabitants of the country, irrespective of colour or origin; and that, in requiring them to abide by it, they were only being required to do the duty imposed upon all the people throughout the Dominion of Canada. I dwelt upon the importance, in their own interest, of the observance of the laws respecting the protection of fish and game.

As to education, the Indians were assured that there was no need for special stipulation over and above the general provision in the treaty, as it was the policy of the government to provide in every part of the country as far as circumstances would permit, for the education of the Indian children, and that the law provided for schools for Indians maintained and assisted by the government being conducted as to religious auspices in accordance with the wishes of the Indians.

It was explained that the assistance in farming and ranching mentioned in the treaty, is only to be given when the Indians are actually prepared to go into those industries. It is not likely that for many years to come, there will be a call for any but a small expenditure under these heads. It is not probable that the Indians will, while present conditions continue, engage in farming further than the raising of roots in a small way. As to cattle, I stated that the agent who will be sent to make the next treaty payments, would be asked to discuss the matter with them, but that those only who are considered able and willing to take good care of cattle would receive assistance in that form.

I promised that medicines would be placed at different points in the charge of persons to be selected by the government, and would be distributed to those of the Indians who might require them. I showed them that it would be practically impossible for the government to arrange for a resident doctor owing to the Indians being so widely scattered over such an extensive territory; but I assured them that the government would always be ready to avail itself of any opportunity of affording medical service just as it provided that the physician attached to the commission should give free attendance to all Indians whom he might find in need of treatment.

In the main, the demand will be for ammunition and twine, as the great majority of the Indians will continue to hunt and fish for a livelihood. It does not

appear likely that the conditions of that part of Saskatchewan covered by the treaty will be for many years so changed as to affect hunting and trapping, and it is expected, therefore, that the great majority of the Indians will continue in these pursuits as a means of subsistence.

The Indians were given the option of taking reserves or land in severalty, when they felt the need of having land set apart for them. I made it clear that the government had no desire to interfere with their mode of life or to restrict them to reserves and that it undertook to have land in the proportions stated in the treaty set apart for them, when conditions interfered with their mode of living and it became necessary to secure them possession of land.

The Indians dealt with are in character, habit, manner of dress and mode of living similar to the Chipewyans and Crees of the Athabaska country. It is difficult to draw a line of demarcation between those who classed themselves as Indians and those who elected to be treated with as half-breeds. Both dress alike and follow the same mode of life. It struck me that the one group was, on the whole, as well able to provide for self-support as the other.

After leaving Green Lake, our route was by rivers and lakes and afforded not much opportunity of forming an opinion of the country ceded and of its resources. From our point of view, the country appeared flat. There were extensive stretches of hay-lands along the rivers and wooded heights about the lakes. The waters abound in fish, which form the chief article of food.

The Isle à la Crosse mission was founded about sixty-two years ago by Father Lafleche, who afterwards was a prominent figure in the Quebec hierarchy, and Brother Taché, who afterwards filled the See of St. Boniface. The church built by them was destroyed by fire and has been replaced by another. The building next in importance is the school conducted by the sisters. It shows marked evidence of age externally, but is cosy within, and the children whom I had the pleasure of meeting there, evidenced the kindly care and careful training of the devoted women who have gone out from the comforts of civilization to work for the betterment of the natives of the north. The priest's house is a small one. Its only door opens into a large room which occupies the greater part of the building and which is the common gathering place of the Indians and half-breeds, who sit and smoke with an ease that seemed born of long habit of free intercourse with those who have undertaken the cure of their souls.

The mission is about opposite the company's post. It is close to the shore. The site is rather flat and for miles on three sides stretches a bald prairie, though we were told that the mission when founded was on the fringe of the forest. Whatever it may have been, it is no longer a desirable situation for a boarding school, and a new one has been erected at Rivière la Plonge, some thirty miles south of the mission. The building is one hundred feet by sixty-two feet, and is two and a half storeys high. It was finished when I visited it. The site is a delightful one on a rising ground from the river, which here breaks into a cataract that the Oblate brothers have harnessed for power purposes. They cut the logs, and, with the harnessed river, sawed them into lumber, with which they built the school, a splendid monument to their mechanical skill, industry and devotion. When I was leaving Isle à la Crosse, the moving of the children from the old to the new institution had begun.

Our trip was rather a difficult one. Our transport had to be organized on short notice. The water in the rivers was pretty low, and we encountered storms on the lakes; but there was no ground for the report of shipwreck and loss which unfortunately obtained currency.

I had the pleasure of the company, on most of the inward trip, of His Lordship Bishop Pascal; and I desire to repeat here the acknowledgment I made and the gratitude I expressed to his lordship personally for the assistance of his influence on my first meeting the natives of the country, which is filled with reverence for his name because of his devoted labours.

I desire to express, also, my appreciation of the help ever readily rendered by Major Begin, of the Royal Northwest Mounted Police, who was in command of the escort; by Dr. J. J. A. Lebrecque, the medical officer; by Mr. Charles Fisher, of Duck Lake, and Mr. Charles Mair, of Ottawa, secretaries to the commission, by the Hudson's Bay Company's chief factor, and by Mr. Angus McKay, the officer of the company who was especially charged with the carrying out of the transportation contract. To the men of the country on whose labour we had so much to depend I acknowledge my obligation. They worked long hours at paddling and rowing and poling, and endured great hardships in tracking and walking our canoes and flat boats over the rapids and shoals, so that I might keep my appointments. Camp was made late and broken early. Yet there was never a complaint, but always a zestful interest and cheerfulness as pleasant as the camp-fires that brightened the night.

A detailed statement of the Indians treated with and of the money paid is appended.

I have the honour to be, sir,
Your obedient servant,
J. A. J. McKENNA.
Commissioner.

STATEMENT of Indians paid annuity and gratuity moneys in Treaty No. 10 during 1906.

Name of Band.	Chiefs.	Headmen.	Other Indians.	Cash paid each Band.	Total Cash paid.
				$ cts.	$ cts.
English River Band (Chipewyans)—					
Chief at $32	1			32 00	
Headmen at $22		2		44 00	
Other Indians at $12			150	1,800 00	1,876 00
Clear Lake Band (Chipewyans)—					
Chief at $32	1			32 00	
(No headmen appointed)					
Other Indians at $12			158	1,896 00	1,928 00
Canoe Lake Band (Crees)—					
Chief at $32	1			32 00	
Headmen at $22		2		44 00	
Other Indians at $12			79	948 00	1,024 00
Total	3	4	387		4,828 00

SUMMARY.

3 chiefs at $32	$	96 00
4 headmen at $22		88 00
387 other Indians at $12		4,644 00
394	$	4,828 00

Certified correct,

J. A. J. McKENNA.
Commissioner, Treaty No. 10.

TREATY No. 10.

Articles of a treaty made and concluded at the several dates mentioned therein, in the year of our Lord one thousand nine hundred and six between His Most Gracious Majesty the King of Great Britain and Ireland by His commissioner, James Andrew Joseph McKenna, of the city of Winnipeg, in the province of Manitoba, Esquire, of the one part, and the Chipewyan, Cree and other Indian inhabitants of the territory within the limits hereinafter defined and described by their chiefs and headmen hereunto subscribed of the other part.

Whereas the Indians inhabiting the territory hereinafter defined have, pursuant to notice given by His Majesty's said commissioner in the year 1906, been convened to meet His Majesty's said commissioner representing His Majesty's government of the Dominion of Canada at certain places in the said territory in this present year 1906 to deliberate upon certain matters of interest to His Most Gracious Majesty on the one part and the said Indians of the other.

And whereas the said Indians have been notified and informed by His Majesty's said commissioner that it is His Majesty's desire to open for settlement, immigration, trade, travel, mining, lumbering and such other purposes as to His Majesty may seem meet, a tract of country bounded and described as hereinafter mentioned and to obtain the consent thereto of his Indian subjects inhabiting the said tract and to make a treaty and arrange with them so that there may be peace and good will between them and His Majesty's other subjects, and that His Indian people may know and be assured of what allowances they are to count upon and receive from His Majesty's bounty and benevolence.

And whereas the Indians of the said tract, duly convened in council at the respective points named hereunder and being requested by His Majesty's said commissioner to name certain chiefs and headmen who should be authorized on their behalf to conduct such negotiations and sign any treaty to be founded thereon and to become responsible to His Majesty for the faithful performance by their respective bands of such obligations as shall be assumed by them, the said Indians have therefore acknowledged for that purpose the several chiefs and headmen who have subscribed hereto.

And whereas the said commissioner has proceeded to negotiate a treaty with the Chipewyan, Cree and other Indians inhabiting the said territory hereinafter defined and described and the same has been agreed upon and concluded by the respective bands at the dates mentioned hereunder;

Now therefore the said Indians do hereby cede, release, surrender and yield up to the government of the Dominion of Canada for His Majesty the King and His successors for ever all their rights, titles and privileges whatsoever to the lands included within the following limits, that is to say:—

All that territory situated partly in the province of Saskatchewan and partly in the province of Alberta, and lying to the east of Treaty Eight and to the north of Treaties Five, Six and the addition to Treaty Six, containing approximately an area of eighty-five thousand eight hundred (85,800) square miles and which may be described as follows:—

Commencing at the point where the northern boundary of Treaty Five intersects the eastern boundary of the province of Saskatchewan; thence northerly along the said eastern boundary four hundred and ten miles, more or less, to the sixtieth parallel of latitude and northern boundary of the said province of Saskatchewan; thence west along the said parallel one hundred and thirty miles, more or less, to the eastern boundary of Treaty Eight; thence southerly and westerly following the said eastern

boundary of Treaty Eight to its intersection with the northern boundary of Treaty Six; thence easterly along the said northern boundary of Treaty Six to its intersection with the western boundary of the addition to Treaty Six; thence northerly along the said western boundary to the northern boundary of the said addition; thence easterly along the said northern boundary to the eastern boundary of the said addition; thence southerly along the said eastern boundary to its intersection with the northern boundary of Treaty Six; thence easterly along the said northern boundary and the northern boundary of Treaty Five to the point of commencement.

And also all their rights, titles and privileges whatsoever as Indians to all and any other lands wherever situated in the provinces of Saskatchewan and Alberta and the Northwest Territories or any other portion of the Dominion of Canada.

To have and to hold the same to His Majesty the King and His successors for ever.

And His Majesty the King hereby agrees with the said Indians that they shall have the right to pursue their usual vocations of hunting, trapping and fishing throughout the territory surrendered as heretofore described, subject to such regulations as may from time to time be made by the government of the country acting under the authority of His Majesty and saving and excepting such tracts as may be required or as may be taken up from time to time for settlement, mining, lumbering, trading or other purposes.

And His Majesty the King hereby agrees and undertakes to set aside reserves of land for such bands as desire the same, such reserves not to exceed in all one square mile for each family of five for such number of families as may elect to reside upon reserves or in that proportion for larger or smaller families; and for such Indian families or individual Indians as prefer to live apart from band reserves His Majesty undertakes to provide land in severalty to the extent of one hundred and sixty (160) acres for each Indian, the land not to be alienable by the Indian for whom it is set aside in severalty without the consent of the Governor General in Council of Canada, the selection of such reserves and land in severalty to be made in the manner following, namely, the Superintendent General of Indian Affairs shall depute and send a suitable person to determine and set apart such reserves and lands, after consulting with the Indians concerned as to the locality which may be found suitable and open for selection.

Provided, however, that His Majesty reserves the right to deal with any settlers within the bounds of any lands reserved for any band or bands as He may see fit; and also that the aforesaid reserves of land, or any interest therein, may be sold or otherwise disposed of by His Majesty's government of Canada for the use and benefit of the Indians entitled thereto, with their consent first had and obtained.

It is further agreed between His Majesty and His said Indian subjects that such portions of the reserves and lands above mentioned as may at any time be required for public works, buildings, railways or roads of whatsoever nature may be appropriated for such purposes by His Majesty's government of Canada due compensation being made to the Indians for the value of any improvements thereon, and an equivalent in land, money or other consideration for the area so appropriated.

And with a view to showing the satisfaction of His Majesty with the behaviour and good conduct of His Indians and in extinguishment of all their past claims, He hereby through His commissioner agrees to make each chief a present of thirty-two (32) dollars in cash, to each headman twenty-two (22) dollars and to every other Indian of whatever age of the families represented at the time and place of payment twelve (12) dollars.

His Majesty also agrees that next year and annually thereafter for ever He will cause to be paid to the Indians in cash, at suitable places and dates of which the said Indians shall be duly notified, to each chief twenty-five (25) dollars, each headman fifteen (15) dollars and to every other Indian of whatever age five (5) dollars.

Further His Majesty agrees that each chief, after signing the treaty, shall receive a silver medal and a suitable flag, and next year and every third year thereafter each

chief shall receive a suitable suit of clothing, and that after signing the treaty each headman shall receive a bronze medal and next year and every third year thereafter a suitable suit of clothing.

Further His Majesty agrees to make such provision as may from time to time be deemed advisable for the education of the Indian children.

Further His Majesty agrees to furnish such assistance as may be found necessary or advisable to aid and assist the Indians in agriculture or stock-raising or other work and to make such a distribution of twine and ammunition to them annually as is usually made to Indians similarly situated.

And the undersigned Chipewyan, Cree and other Indian chiefs and headmen on their own behalf and on behalf of all the Indians whom they represent do hereby solemnly promise and engage to strictly observe this treaty in all and every respect and to behave and conduct themselves as good and loyal subjects of His Majesty the King.

They promise and engage that they will in all respects obey and abide by the law; that they will maintain peace between each other and between their tribes and other tribes of Indians and between themselves and other of His Majesty's subjects whether whites, Indians, half-breeds or others now inhabiting or who may hereafter inhabit any part of the territory hereby ceded and herein described, and that they will not molest the person or trespass upon the property or interfere with the rights of any inhabitant of such ceded tract or of any other district or country or interfere with or trouble any person passing or travelling through the said tract or any part thereof and that they will assist the officers of His Majesty in bringing to justice and punishment any Indian offending against the stipulations of this treaty or infringing the law in force in the country so ceded.

In witness whereof His Majesty's said commissioner and the chiefs and headmen have hereunto set their hands at Isle à la Crosse this twenty-eighth day of August in the year herein first above written.

Signed by the parties hereto in the presence of the undersigned witnesses the same having first been explained to the Indians by Magloire Maurice, interpreter.
J. V. BEGIN,
Supt., R.N.W.M. Police.
I. RAPET, ptre, O.M.I.,
CHAS. FISHER,
CHAS. MAIR,
ANGUS MCKAY,
D. MCKENNA,
T. DAVIS.

J. A. J. McKENNA,
Commissioner.
his
WILLIAM X APISIS,
mark
Chief of the English River Band.
his
JOSEPH X GUN,
mark
Headman.
his
JEAN BAPTISTE X ESTRAL-SHENEN, mark
Headman.
his
RAPHAEL X BEDSHIDEKKGE,
mark
Chief of Clear Lake Band.

Signed by the Chief and Headmen of the Canoe Lake band, this 19th day of September, A.D. 1906. The treaty having been read over and explained by Archie Park, interpreter, in the presence of the undersigned witnesses.
J. V. BEGIN,
Supt., R.N.W.M.P.,

his
JOHN X IRON,
mark
Chief of Canoe Lake Band.
his
BAPTISTE X IRON,
mark
Headman, Canoe Lake Band.

L. Cochin, ptre, O.M.I.,
J. E. Teston, ptre, O.M.I.,
F. E. Sherwood,
Const., R.N.W.M. Police,
his
Archie x Park, Interpreter.
mark
Charles Mair,

his
JEROME X COUILLONEUR,
mark
Headman, Canoe Lake Band.

Articles of a treaty made and concluded at the several dates mentioned therein, in the year of our Lord one thousand nine hundred and seven, between His Most Gracious Majesty the King of Great Britain and Ireland by His Commissioner Thomas Alexander Borthwick, of Mistawasis, in the province of Saskatchewan, Esquire, of the one part, and the Chipewyan, Cree and other Indian inhabitants of the territory within the limits hereinafter defined and described by their chiefs and headmen hereunto subscribed of the other part.

* * * * * * *

In witness whereof His Majesty's said commissioner and the chiefs and headmen have hereunto set their hands at Lac du Brochet this 19th day of August, in the year first above written.

Signed by the parties hereto in the presence of the undersigned witnesses the same having first been explained to the Indians by A. Turquetil.
Charles La Violette,
Interpreter.
W. J. McLean, *Witness.*
A. W. Bell, *Witness.*
Thomas Borthwick,
Commissioner, Treaty No. 10.

his
PETIT X CASIMIR,
mark
Chief of Barren Land Band.
his
JEAN X BAPTISTE,
mark
Headman of Barren Land Band.
his
ANDRE X ANTSANEN,
mark
Indian of Barren Land Band.

In witness whereof His Majesty's said commissioner and the chiefs and headmen have hereunto set their hands at Lac du Brochet this 22nd day of August in the year first above written.

Signed by the parties hereto in the presence of the undersigned witnesses the same having first been explained to the Indians by E. S. Turquetil, interpreter.
Witness A. W. Bell,
" W. J. McLean.

his
THOMAS X BENAOUNI,
mark
Chief of Hatchet Lake Band.
Witness A. W. BELL,
his
PIERRE X AZE.
mark
Headman of Hatchet Lake Band.

THOS. BORTHWICK,
Commissioner, Treaty 10.

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REPORT OF SECOND COMMISSIONER FOR TREATY No. 10.

MISTAWASIS, CARLTON AGENCY, October 14, 1907.

FRANK PEDLEY, Esq.
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report upon the payments of their annuities to those of the Indians of Treaty No. 10 who were treated with last year, and also transmit herewith the treaty, which, under the authority that devolved upon me by the commission issued to me on the 6th day of April, 1907, I concluded with the Chipewyan Indians living in the region of Lac du Brochet and Lac la Hache, and in the part of the district of Keewatin adjoining the northeast corner of the province of Saskatchewan.

With the view of keeping appointments for the payments of their annuities to the Indians who were treated with last year at Isle à la Crosse, I proceeded from here on June 11, and after travelling over some very bad road, I arrived at Green Lake on the afternoon of the 15th, and got to Isle à la Crosse at noon of Saturday, June 22, one day behind the date that was fixed for my arrival there. Very unfavourable weather was the cause of delay. Only the Canoe Lake band of Indians had so far assembled there to meet me; and I at once had an interview with the chief and headmen of that band, and it being Saturday, they asked that the paying of their annuities be postponed until Monday, the 24th. To that request I conceded, and accordingly they were paid on that and the following day. The Indians of English River and Clear Lake bands not having then arrived, I began taking evidence in connection with claims for scrip preferred by a number of half-breeds from Souris River who did not have a chance of meeting the commissioner of last year at Isle à la Crosse. The evidence adduced by these applicants for scrip was continued up to the 29th, when the English River and Clear Lake bands having fully arrived, were paid their annuities. The 1st of July, being Dominion Day, was, at the request of the half-breeds and Indians, observed as a holiday, and they celebrated it with great enthusiasm; the members of the commission and other gentlemen present heartily joining them and making their sports pecuniarily interesting for them.

Further dealings with the Indians and half-breeds occupied the time of the commission up to July 3, when, upon being informed that a considerable number of half-breeds and Indians were assembled at the Roman Catholic mission near Portage la Loche and expecting me there, I proceeded to that place, and after a very trying trip with rains and stormy weather, I reached there late on the evening of July 9, and owing to the number of half-breeds who had to be dealt with here, and the very inclement weather prevailing, it took up to the 14th to get through with the work. In addition to the half-breeds assembled here, I found a number of families of Indians from Whitefish Lake, who asked very earnestly that I should pay them their annuities. I explained to them that I could not do that, as it was inconsistent with the rules of the department to pay Indians of a certain treaty by the agent of another treaty. They pointed out that it was a great hardship for them to be compelled to travel over a hundred miles through a difficult section of the country going to Fort McMurray, which took them five or six days to get there and the same number of days returning to their homes. Before leaving the mission, they handed me a petition praying that they be paid next year at Buffalo River on Buffalo lake, to which point they can come in less than two days from Whitefish Lake.

On Monday morning, July 15, I left the mission on the return trip to Isle à la Crosse, and after an unusually favourable trip I arrived there on the 17th. Here I was detained for five days to procure tripmen to go on to Stanley, for which place I started on the morning of July 23 and arrived there on the evening of August 1. Here I met some fifty heads of families of the Lac la Ronge Indians, headed by their chief, Amos Charles, and two of their headmen, who asked that they be paid their annuities there, as many of them spent the summer and autumn on the Churchill river, and in compliance with their request they were paid on the 2nd and 3rd; the 5th and 6th were occupied taking evidence of applicants for scrip and procuring tripmen for the Lac du Brochet trip. On the morning of August 7 I left Stanley for the Hudson's Bay Company's post on the north end of Lac du Brochet, and after a successful trip reached that place on the 17th idem.

Owing to the amount of work which devolved upon the commission that was not anticipated, it was made impossible for me to reach this place, which was the stated point of rendezvous with the Indians, on the date that they were notified I was to be there to meet them; and consequently they were detained for ten days awaiting my arrival, and which led to their running out of provisions, they being all assembled with their families, and finding that they were reduced to such a state, I felt that it was proper for me to relieve their immediate necessities, and accordingly I supplied them with a limited quantity of provisions, for which they appeared to feel very thankful. I consider it proper that I should mention here that considerable help was afforded these Indians whilst waiting my arrival by Mr. A. McDermot, the Hudson's Bay Company's agent at this place, by giving them some light work to do and paying them for it in provisions, and likewise by the agent of the Revillon Bros.

On the morning of August 19 I held council with the combined Indians of the Barren Land and the Indians of Lac la Hache, the Rev. Father Turquetil acting as interpreter, which he did on all subsequent occasions during my transactions with the Indians here, the Chipewyan language being spoken. I explained to them why I was sent to meet them, and after various thoughtful questions put by the Indians bearing upon the treaty and answered by me to their satisfaction, they asked for a short recess to discuss the terms of the treaty more fully among themselves; which was granted them. At 2 p.m. they reassembled and the Barren Land band announced that they had elected their chief and two headmen, and were prepared to accept the terms of the treaty. The Lac la Hache band intimated that some of their people were away, but would be back in a day or so, and that they would like to have their concurrence in the matter of selecting their chief and councillors; I consented to their waiting a day or so, if necessary, in order to obtain the full consent of their band to their transactions. The chief and headmen of the Barren Land band then formally signed the treaty, and without further undue delay the payments of their gratuities and annuities were begun to them, and were got through with at noon on the 21st. The number of Indians treated with in this band was 232, including:—

1 chief	$ 32 00
2 headmen at $22	44 00
229 other Indians at $12	2,748 00
	$2,824 00

The Lac la Hache band assembled on the 22nd, and after the terms of the treaty were read over to them for the second time and thoroughly explained in their own language, they presented their elected chief and two headmen, who then in due form signed the treaty, and the members of the band were paid in accordance with the terms of the treaty. The number of Indians paid in this band was 97, including:—

1 chief	$ 32 00
2 headmen at $22	44 00
94 other Indians at $12	1,128 00
	$1,204 00

This practically finished the Indian work at this point, and after a number of half-breeds' applications for scrip were received, I left this place on August 24 for Lac la Ronge, via Stanley, and on September 3, after a very unusually expeditious trip, I arrived at the paying ground at Lac la Ronge; and on the 4th and 5th paid the rest of the James Roberts band—some 60 odd heads of families who were not paid at Stanley.

After taking the evidence of a number of half-breed applicants for scrip at this place, and holding council meetings with the Indians in connection with the surrender of their reserve, No. 106A, &c., I left on the 11th for Montreal Lake, and arrived there on the 16th, and the following day paid their annuities to the Indians of this place, the William Charles' band.

On the 18th I held meetings with the chief and headmen of the James Roberts' band, who accompanied me to this place, and with that of the Wm. Charles' band combined, bearing upon the surrender of their reserve, No. 106A, when, after due deliberation, they unanimously agreed to relinquish the reserve to the government upon the terms set forth in an agreement signed by them on the 18th day of September, 1907; which agreement was transmitted to the Deputy Minister of Indian Affairs on the 8th instant.

On the afternoon of the 18th of September, the commission party left Montreal lake with canoes for the landing on Red Deer lake, where they arrived on the 21st, after being detained one day en route with stress of weather. At the landing teams were taken to this place (Mistawasis) where we arrived on the evening of September 24, ultimo; this completing an arduous trip of over 2,000 miles by water, in canoes, and 300 miles by land, which I have pleasure to say was performed successfully and without accident.

Concerning my staff, I am pleased to state that I was excellently equipped, and that, in general, a fine spirit existed amongst its members; of some of them I cannot speak too highly. Dr. H. A. Stewart proved himself ideally fitted for his post. Full of the kindest sympathy for the sick, he was untiring in his labours on their behalf; a skilful physician, he was most successful in his efforts to relieve their suffering, and won golden opinions from all who required his services. W. J. McLean, the senior secretary, displayed special ability in the performance of the onerous duties of his position, his previous experience in treaty payments standing him in good stead; while his knowledge of the French language, his long residence as a chief factor of the Hudson's Bay Company, in the part of the country traversed, and his personal acquaintance with many of the applicants, materially contributed to the success of my commission.

Of the rest it would be invidious to make personal mention, suffice to say that each performed his duties with energy and intelligence, sacrificing rest and comfort, and facing danger in the effort to cover distances with the least possible loss of time.

I have the honour to be, sir,

Your obedient servant,

THOS. A. BORTHWICK,

Commissioner, Treaty No. 10.

REPORTS

OF

SUPERINTENDENTS AND AGENTS

PROVINCE OF ONTARIO,
DISTRICT OF ALGOMA, CHAPLEAU AGENCY,
CHAPLEAU, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report with statistical statement for the year ended March 31, 1908.

This agency comprises seven reserves.

OJIBEWAYS, ROBINSON TREATY INDIANS, AT CHAPLEAU RESERVE.

This reserve is situated on the east side of the Nebsquashing river, south of the village of Chapleau, and contains 220 acres. The country is sand and rocks and not adapted for cultivation.

Population.—The population of this band is 76.

Health and Sanitation.—There has been no serious disease among the Indians of this band, and they are fairly clean.

Occupations.—The members of this band rely entirely upon fishing, hunting and trapping for their livelihood.

Buildings and Stock.—Though tents and teepees are used by these Indians, the majority of them have fairly good dwellings.

Education and Religion.—These Indians can speak only their native tongue, and do not appear to be sufficiently enlightened to send their children to school when a vacancy occurs. Their religion is Anglican.

Temperance and Morality.—I have had no complaints of any intemperance among this band, and in fact have not heard a single rumour to that effect. I might say they are as religiously inclined as any band I have been among, and with reference to morality I can say that their behaviour is extremely good, and, moreover they appear to have a much more settled temperament than most of the tribes.

OJIBEWAYS, ROBINSON TREATY INDIANS, AT MISSINAIBI RESERVE.

This reserve comprises 216 acres as well as two small islets, one containing 4 acres and the other containing half an acre adjoining the reserve, and is situated near the village of Missinaibi on Dog lake.

Population.—The population of this band is 65.

Health and Sanitation.—The general condition of these Indians is good, and no serious disease has visited them lately.

Occupations.—These Indians live mostly by hunting, trapping, fishing, and acting as guides; while a few are engaged with the Hudson's Bay Company.

Buildings and Stock.—The majority of these Indians are living in fairly good dwelling-houses; while some of them use the teepee.

Education and Religion.—They have no opportunity of schooling their children without either sending them to the Sault or to the school here at Chapleau, and as our school is overcrowded, their education is sadly neglected. Their religion is Anglican.

Temperance and Morality.—At this point they were leading a life of intemperance and immorality, but in the course of the past year there has been a marked improvement, and I might say that their habits are very good at present.

MOOSE FACTORY CREES, TREATY 9, CHAPLEAU RESERVE.

This reserve contains 160 acres fronting on the Kerebesquashesing river.

Population.—The population of this band is 72, and they practically all live in the village of Chapleau.

Health and Sanitation.—The health of this band has been extremely good during the past year.

Buildings and Stock.—All these Indians are living in houses, and some of them have very substantial buildings.

Occupations.—The majority of them work by the day, while a few do a little fishing, hunting and trapping.

Education and Religion.—All these Indians understand English, and the majority of them can read and write. They have the opportunity of sending their children to school in Chapleau.

Temperance and Morality.—These Indians are temperate in spite of the opportunity they have of procuring liquor, and no complaints have come in regarding their morality during the past year.

OJIBEWAYS, TREATY 9, CHAPLEAU RESERVE.

This reserve comprises 160 acres, directly south of the reserve owned by the Robinson Treaty Indians.

Population.—The population of this band is 76.

Health and Sanitation.—They have had extremely good health during the past year.

Occupations.—These Indians all fish, hunt, trap, and act as guides for their means of livelihood.

Buildings and Stock.—They have lately erected houses in connection with the Robinson Treaty Indians at Chapleau, whose neighbours they are.

Education and Religion.—These Indians speak only their own language, and have not had the advantage of a school education.

Temperance and Morality.—These Indians are temperate, and I hear no rumours of any immorality among them.

MATTAGAMI INDIANS, TREATY 9, OJIBEWAYS: MATTAGAMI RESERVE.

This reserve is situated on the west side of the Mattagami lake, three-quarters of a mile north of a point opposite the Hudson's Bay Company's post, and has an area of 20 square miles.

Population.—The population of this band is 94.

Health and Sanitation.—The health of this band is extremely good, and no sickness was reported.

Occupations.—They live altogether by hunting and trapping, and have more of an opportunity of livelihood on account of being near the Transcontinental railway, where they are steadily employed as guides.

Buildings and Stock.—They live entirely in teepees, and have no substantial buildings or dwellings whatever.

Education and Religion.—These Indians all speak their native tongue, and have no opportunity of educating their children. They have a small church, visited possibly once a year by some missionary, and are of the Anglican denomination.

Temperance and Morality.—They are very temperate in their habits, and we hear no reports whatever of any immorality.

OJIBEWAYS, TREATY 9, FLYING POST RESERVE.

This reserve is situated on Six Mile rapids, on the east side of Ground Hog river, and has an area of 23 square miles.

Population.—The population of this band is 106.

Health and Sanitation.—The health of this band is not so good, as the Indians are old and apparently not able to take very good care of themselves.

Occupations.—They earn their livelihood by means of hunting, fishing, trapping and as guides.

Buildings and Stock.—They have no buildings whatever, and all the band live in tents and teepees.

Education and Religion.—They have no means of education whatever, and all speak their native tongue. They have a small church, but do not see a minister once in a year. They are Anglicans.

Temperance and Morality.—They are all very temperate, but have a very limited idea of what morality means.

NEW BRUNSWICK HOUSE INDIANS, TREATY 9, OJIBEWAYS.

This reserve has an area of 27 square miles, and is situated on the west shore of the Missinaibi river, about half a mile southwest of the Hudson's Bay Company's post.

Population.—The population of this band is 136.

Health and Sanitation.—The health and sanitation of this band are exceptionally good, and I might say that it is the most industrious and healthy band in the district.

Occupations.—These Indians earn their livelihood by hunting, fishing, trapping and as guides.

Buildings and Stock.—Most of the Indians in this band own their houses, and very few live in teepees.

Education.—They have no school, and consequently no chance of education; but in regard to religion, they have had a missionary visiting them nearly all last summer, which gave them a great advantage over the other bands. They are Anglicans.

Temperance and Morality.—The members of this band are temperate, and morality is a redeeming feature among them.

I have, &c.,

H. A. WEST,

Indian Agent.

PROVINCE OF ONTARIO,
CHIPPEWAS, MUNSEES AND ONEIDAS OF THE THAMES,
DELAWARE, April 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report concerning the three bands included in this agency, for the year ended March 31, 1908.

ONEIDAS OF THE THAMES.

Reserve.—The Oneida reserve is situated in the township of Delaware, Middlesex county. It contains 5,271 acres of choice farming land.

Population.—The population of the band is 782.

Health and Sanitation.—The small-pox epidemic which broke out in January, 1907, was finally stamped out in July, 1907. No deaths resulted from the disease. A serious outbreak of whooping-cough occurred among the children during last winter, and several deaths followed. Consumption is the most prevalent disease, otherwise the health of the band has been very good during the year.

Occupations.—The principal occupation is day labour. There are a few good farmers. They have very good vegetable gardens. They earn a large amount of money from pulling flax, berry-picking, cutting wood among the whites and from employment with canning factories. A good deal of money is also realized from basket and mat making. Receipts from all these sources of income are somewhat less this year, as the Indians were unable to obtain work in the early part of last summer during the small-pox epidemic.

Buildings, Stock and Farm Implements.—The dwelling-houses are principally small frame buildings. During the year many of these have been repaired, cement foundations being put in under many of them. There are several brick and cement block houses. These Indians do not raise much stock, but what they have is of average breeding. Those who farm are fairly well supplied with farm implements and farm buildings.

Education.—There are two day schools on the reserve. The attendance has been very good, and the progress made by the children during the year has been very satisfactory.

Characteristics and Progress.—Generally speaking, the Oneida Indians are industrious and law-abiding. There are a few members of the band who are progressing very well, but as a whole their progress is slow.

Temperance and Morality.—It is to be regretted that some of the Indians occasionally use intoxicating liquors, and the marriage law is not as well observed as it ought to be.

CHIPPEWAS OF THE THAMES.

Reserve.—This band occupies part of the Caradoc reserve, comprising 8,702 acres, which for the most part is a beautiful, undulating, fertile tract of country.

Population.—The population of the band is 475.

Health and Sanitation.—Sanitary precautions have been fairly well observed. Consumption is the most prevalent disease. A serious outbreak of whooping-cough among the children occurred during the winter.

Occupations.—The occupations of the band are principally day labour and farming. A good deal of money is earned by these Indians from pulling flax and cutting wood among the whites, and from employment in connection with canning factories.

Buildings and Stock.—The barns and stables, though generally small, are in fairly good repair. The houses are principally small log or frame buildings. There are several good brick houses. Not much stock was carried over the winter of 1907-8, owing to high prices of feed. Their horses are of a fairly good quality.

Education.—There are three day schools on the reserve. The attendance was fair during the year. The progress made by the children was satisfactory.

Characteristics and Progress.—These Indians are usually law-abiding and fairly industrious. They do not make much progress.

Temperance and Morality.—These Indians are usually temperate. The marriage law, I regret to say, is not observed as well as it ought to be.

MUNSEES OF THE THAMES.

Reserve.—This band occupies 2,098 acres, a portion of the Caradoc reserve.

Population.—The population of this band is 112.

Health and Sanitation.—The health of these Indians has been fairly good. No epidemic broke out during the year. Sanitary measures have been fairly well observed. Consumption is the most prevalent disease.

Occupations.—The occupations of this band are principally day labour and farming.

Buildings, Stock and Farm Implements.—The buildings are not as good as could be desired. There is a good brick house on this reserve. Not much stock is raised, but what they have is of a fair quality. Those who farm are fairly well supplied with farm implements.

Education.—There is one day school on this reserve. The attendance was fair during the year. The children have made progress in their studies.

Characteristics and Progress.—These Indians may be considered as fairly industrious. Their progress is slow.

Temperance and Morality.—These Indians are generally temperate and fairly moral.

I have, &c.,
S. SUTHERLAND,
Indian Agent.

PROVINCE OF ONTARIO,
CHIPPEWAS OF CHRISTIAN ISLAND,
PENETANGUISHENE, April 15 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report and statistical statement showing the condition and progress of the Indians under my supervision during the year ended March 31, 1908.

Reserve.—The reserve of this band is located on Christian island, situated at the southern end of Georgian bay on the steamboat route from Collingwood to Parry Sound, and from Collingwood to Midland and Penetanguishene.

Population.—The population of this band is 228, a decrease of 7 since last year.

Health.—The general health of the band has been good. No contagious diseases have been prevalent. All sanitary regulations have been observed.

Stock.—The Indians have excellent cattle of Polled Angus breed, and they are always in fine condition.

Occupations.—Most of the Indians work on their farms during the summer months. The younger men work at the mills and act as guides to tourists. In winter they take out wood, so that they are occupied during the year, which enables them to be fairly comfortable. In the fall large quantities of fish are caught close to the island.

Education.—The school is still under the guidance of the Rev. Mr. Wilson, B.A., who is very popular with the children, and their advancement has been very satisfactory.

Temperance.—The Indians are temperate and well behaved, and are good citizens. Only total abstainers are elected to office.

I have, &c.,

CHAS. McGIBBON,

Indian Agent.

PROVINCE OF ONTARIO,
CHIPPEWAS OF GEORGINA AND SNAKE ISLAND,
SUTTON WEST, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report and statistical statement showing the condition and progress of the Indians under my supervision during the twelve months ended March 31, 1908.

Tribe or Nation.—These Indians are Chippewas.

Reserve.—This reserve is located in the southern waters of Lake Simcoe, Georgina island, being two miles from the main shore, three miles east of Jackson's Point, a popular summer resort, the terminus of the Stoufville branch of the Grand Trunk railway, also the terminus of the Metropolitan electric railway. Snake island is a part of the reserve and is 12 miles to the west of Georgina island and one mile from Morton Park, another summer resort. The reserve contains 3,497 acres, and is a good clay soil and is well adapted for raising grains of all kinds and roots, and is especially adapted for raising stock.

Population.—The population of this reserve is 107.

Health and Sanitation.—The health of the Indians has been pretty good for the past year, notwithstanding the large death-rate. One woman died from consumption, one from cancer, most of the rest that died were children or very old persons; there have been no epidemics prevalent during the year. There was a general vaccination last winter, when over 70 were vaccinated. All the ordinary precautions, such as avoiding bad water, wearing warm clothing, keeping the premises and dwellings clean, are well observed.

Occupations.—Some of the Indians farm, and most of the rest raise some vegetables. The young men work out for farmers in the summer, and in the lumber camps in the winter. The old men take campers out fishing, make paddles and axe handles, peel bark, and dig roots for sale for medical purposes; some sell a little wood,

a few get good pay as guides for hunters in the fall. The women make baskets and fancy-work, and get good prices. Burning lime is an industry that I have been trying to induce the Indians to take up, as there is plenty of limestone and wood, and ready sale for all they could burn.

Buildings.—The buildings are pretty good as a rule; quite a number of the dwelling houses are frame, also a few frame barns.

Stock.—The stock is very good, but there is not enough, especially of horses.

Farm Implements.—There are plenty of farm implements of a very good quality for the use of the Indians.

Education.—There is one day school on the reserve, taught by J. H. Prosser, and the children attend pretty well and are making good progress and the parents seem desirous that their children should be educated.

Characteristics and Progress.—Some of the Indians are fairly industrious and making some progress; others are indolent and do not make any progress. On the whole I cannot say that there is much change. The Indians are quite law-abiding; they hardly ever violate the criminal law.

Temperance and Morality.—The Indians, with six or seven exceptions, are very temperate; but there are a few, mostly young men, that drink if they get an opportunity; none of the women drink liquor; there are a few that seem to be immoral in other ways, but most of them are well behaved.

General Remarks.—The Indians of this reserve that have teams and farms get along much better than those that have no teams. The Indians are too apt to sell their colts, and, when the old horses are of no more use, they are out of a team. The women look farther ahead than the men, for they usually have large quantities of their wares made in the winter that they do not expect to sell till the campers come to the lake in the summer, when they get ready sale and good prices, and in this way do a deal toward supporting the family.

I have, &c.,

JOHN YATES,
Indian Agent.

PROVINCE OF ONTARIO,
CHIPPEWAS OF NAWASH,
CAPE CROKER, April 16, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the year ended March 31, 1908.

Reserve.—There is only one reserve in the agency. It is situated on the extreme northeast portion of the township of Albemarle, in the county of Bruce. This reserve contains nearly 16,000 acres, about 60 per cent of which is good for cultivation and pasture.

Tribe.—These Indians are nearly all Chippewas.

Vital Statistics.—This band numbers 380 on the pay-list, and about 25 non-treaty Indians, who reside on the reserve. On the pay-lists are 108 men, 120 women, 89 boys and 63 girls. There were 4 births and 16 deaths; 2 went out by marriage and 3 came in by marriage, making a decrease of 11 as compared with the census of last year. The deaths were caused by a drowning accident and some of the older ones dropping off through old age.

Health and Sanitation.—The health of the Indians has been very good, except a few cases of consumption of the lungs. All sanitary measures have been carefully attended to, the dwellings whitewashed and the rubbish burnt up. In their personal appearance the Indians are well dressed, neat and clean. They are rapidly making their homes more comfortable, and building them on sanitary principles.

Occupations.—In agricultural pursuits, the past season has been a poor one in this section of the country, scarcely reaching 50 per cent of the average year's crop. They have had to depend on taking out timber for making a living this winter, and the season was short and severe. There was a decrease in their cattle and horses. Through scarcity of feed, they had to sell a number of them. Their fishing operations were fairly successful during the year; salmon trout and herring are the principal fish caught. The Indian women are industrious. They make baskets and pick berries; they raise poultry and attend to their gardens, nearly all staying at home.

Education.—There are three day schools on this reserve, and good progress is being made in all of them. The school buildings are kept in good order and well equipped, being supplied with industrious teachers.

Temperance and Morality.—A large number of the band are strictly temperate, and belong to temperance societies. A few of them give trouble when they go to town by managing to get whisky, but they are getting better in this respect. When they have no money, there is no trouble about their getting liquor. In regard to morality, there is a decided improvement, and the finger of scorn is pointed at those who drink and act immorally.

Characteristics and Progress.—The industrious Indians are getting along well, except for the poor crop this season, and their progress on the whole is fair. For generations past, they were used to making a living by hunting and fishing, and it will take generations to make good farmers of them; but they make good timbermen.

Religion.—There are two churches on the reserve. The Methodist church is a large stone structure. It is looked after by Rev. Robert Rogers, and has over 200 adherents. A new Roman Catholic church, built of stone, has been erected during the past year, at a cost of $6,000. It is a model of beauty. There are about 150 adherents. Their spiritual welfare is zealously attended to by Rev. Father Cadott. Nearly all the Indians take a deep interest in religious matters, and have over $10,000 invested in two churches.

I have, &c.,
JOHN McIVER,
Indian Agent.

PROVINCE OF ONTARIO,
CHIPPEWAS OF RAMA,
ORILLIA, June 8, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Tribe or Nation.—The Indians of Rama belong to the Chippewa tribe.

Reserve.—The reserve is situated in the northern and western part of the county of Ontario, bordering on the eastern shore of Lake Couchiching, and has an area of 2,000 acres. The southern section is for the most part cleared and suitable for agriculture. The northern part approaches the formation of Muskoka regions and is fairly well timbered.

Population.—The population of the Rama reserve is 234.

Health and Sanitation.—In general the health of the Indians has been good. In spite of the severity of last winter and the general hard times, no epidemic prevailed among them. Sanitary precautions are well attended to; each spring all refuse is collected and burned. Vaccination has been carefully looked after by Dr. McLean.

Occupations.—The Indians of this reserve have excellent opportunities for earning a livelihood. Well connected by railway and close to the town of Orillia, farm produce can be easily disposed of at a good price. Another and a very lucrative employment for the younger men during the summer months is acting as guides to tourists visiting this part of Ontario.

From the same source an excellent market for basket and bead-work is produced. This may be seen by the fact that one dealer, the R. O. Smith Company, of Orillia, purchased last year some $800 worth of Indian fancy-work.

To the north are the lumber camps, paying good wages; here the Indians find work for the winter as bushmen and during the spring as rivermen. I might say that, owing to the general financial depression of the past year, many who relied on this for the winter were out of work. A limited number engage in trapping. Some even go as far north as New Ontario. Their fur can be disposed of at a good price in Orillia or any of the neighbouring towns. During last season Mr. C. Goffatt, a fur dealer of this town, alone purchased $300 worth of fur. A few still engage in fishing. This is principally for home use, and is only to a limited extent.

Buildings.—The greater percentage of the buildings are frame and in general are kept neat and clean.

Stock.—Stock-raising for export is not carried on to any extent on this reserve, and that which is raised for home use is not of a high standard.

Farm Implements.—The farm implements on the whole are not up to the modern standard.

Education.—The school, large, airy and well lighted, comes well up to the standard of the country school of to-day. A growing interest is being shown by the parents, and under the instruction of Miss McBain, the pupils are making good progress.

Characteristics and Progress.—The older Indian usages are gradually disappearing, and the band is slowly becoming more like the whites in manners and customs. Generally speaking, they are peaceable and law-abiding.

The unusual hard times have had their effect on the Indians, who were wholly unprepared, and some were in very straightened circumstances during the winter.

Temperance.—The general sentiment of the band is against the use of intoxicating liquor. Still we have always the minority who indulge freely whenever an opportunity is afforded.

I have, &c.,

D. J. McPHEE,
Indian Agent.

PROVINCE OF ONTARIO,
CHIPPEWAS OF SARNIA,
SARNIA, May 18, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to submit my annual report on matters connected with the Indians on the different reserves under my supervision for the year ended March 31, 1908.

Tribe or Nation.—The Indians on the reserves which are placed in the care of this agency are one band, though living on three different reserves, and are descended

from the three united tribes, Ottawas, Ojibbewas and Pottawattamies, with a small admixture of Shawnee blood, which is confined to thte Kettle Point reserve, where relatives of the famous Chief Tecumseh are residing. All these Indians speak the Ojibbewa language.

Reserves.—There are three reserves in this agency, namely, the Sarnia reserve, the Kettle Point reserve, and the Stony Point or Aux Sables reserve. The Sarnia reserve is adjoining the town of Sarnia, a large part of which is built on land which has at one time formed part of the reserve and lies along the St. Clair river southward from Sarnia to the northern boundary of the township of Moore, a distance of nearly 4 miles, and varies in width, the eastern boundary being a line running due north and south, and the western boundary, which is the river, running in a southwesterly direction, thus making the reserve wider at the south end, where it is about 4 miles across from east to west.

This reserve contains 6,259 acres, which is all fenced in and available for pasture. A considerable portion is cleared and could be farmed, although there is still some land covered with second growth and small timber. The Père Marquette railway runs through this reserve from north to south. It is all good agricultural land. The other two reserves are situated on the south shore of Lake Huron in the township of Bosanquet. The nearest part of Kettle Point reserve is about 26 miles distant from Sarnia, and there is a distance of 2½ miles between the Kettle Point and Stony reserves, which, however, practically form one reserve. The area of the two combined is 4,676 acres. They are more than half covered with timber. They have been subdivided into 80 acre lots, about half of which are occupied. Most of the unoccupied lots are of inferior value for agricultural purposes.

Population.—The present population on the Sarnia reserve is 287, and the united number of inhabitants on the Kettle Point and Stony Point reserves is 134, making a total for the whole band of 421.

Health and Sanitation.—During most of the year the health of the Indians has been fairly good. There has, however, been a considerable amount of illness in all the reserves during the cold weather, chiefly rheumatism and colds, in some cases ending in pneumonia, which in three cases proved fatal. The number of deaths on the Sarnia reserve has been large considering the number of its inhabitants. Consumption has again proved itself to be the most deadly disease that the Sarnia Indians have to contend with. There have been a few cases of typhoid, but except in one case, which was complicated with pneumonia, none have proved fatal. Efforts are being made to induce the Indians to adopt active measures to prevent the spread of tuberculous disease, and steps are being taken to provide for the isolation of consumptive patients in future. The ordinary sanitary precautions have been well observed in the keeping of premises clean and otherwise looking after the general health. At the Kettle Point and Stony Point reserves there have been no deaths and there are no cases of tuberculosis on either of them.

Occupations.—None of the Indians on any of the reserves in this agency are very extensive farmers, although there are some who are showing commendable enterprise in this direction. During the summer at Sarnia large numbers work on the docks, unloading vessels and loading cars; others work in the railroad yards; others at the saw-mills and at the oil refinery. In the winter time wood-cutting is their principal occupation; but this occupation is not now open to many, as the woods have nearly disappeared in this section of the country. At Kettle Point the main industry carried on is acting as boatmen for sportsmen in the bay, who come there to catch fish; also gathering and packing fruit in the fall, and cutting wood in the winter. The Sarnia reserve is especially well adapted for dairying, which would be very much more profitable than the present system of renting pasture at very low rentals to white men in the vicinity. There is also an excellent opening for market gardening and small fruit culture. Something might be done in these directions without the investment of much capital. Poultry-raising might also be greatly extended without much expense.

Buildings.—Generally speaking, the houses are fairly comfortable. There are a few good barns, but there is room for many more. If the cultivation of the soil were increased and extended and larger stocks of cattle kept, more buildings would be required; but in the meantime there are enough to meet the requirements.

Stock.—Those who follow farming to any extent have teams. The herds of cattle are small, many of the Indians having no cattle at all. Hogs and sheep are in most instances conspicuous by their absence. A limited number of fowls are kept at most of the places on all the reserves.

Farm Implements.—All the Indians in this agency who work at farming are fairly well provided with farm implements and wagons.

Education.—There are three schools in this agency. The first of these is the St. Clair school, which was first established as a mission school by the Wesleyan Methodist Church, but which is now maintained out of the interest moneys of the band. This is a large and commodious brick school-house in good spacious grounds, and is fairly well equipped. About forty children attend and are making good progress. Quite a number of the children from this reserve are attending the Shingwauk Home at Sault St. Marie, and the Mount Elgin Institute at Muncey. The result is that nearly all the younger Indians can read and write and have a knowledge of arithmetic sufficient to enable them to transact ordinary business, and most of the adult Indians and all the children who attend school have a fair knowledge of the English language, although it will be some time yet before an interpreter can be dispensed with. The other two schools are the Kettle Point and Stony Point reserve schools. The Kettle Point school has recently been moved to a better site and has been extensively repaired, and, although small, is in the meantime sufficient in size. The usual attendance is about ten. The progress during the past year has been very marked. The Stony Point school had been closed for some years, but last year, as there were a few Indian children on the reserve who were growing up without any education, it was judged best to re-open the school. A teacher was engaged and the building repaired, and the school was opened after the summer holidays. The attendance is small, from six to ten usually attending ; but the progress is satisfactory considering the conditions. In most instances the parents take a keen interest in the progress of their children, and with some exceptions they send them fairly regularly to school.

Characteristics and Progress.—The Indians are, generally speaking, a good law-abiding people, and are above suspicion as far as stealing is concerned, and are never quarrelsome or ill-disposed. While they are good workers when hired, being willing and active, they do not as a rule work steadily for themselves, and always like to get returns from their labour without delay. This results in their working out for wages and renting their locations (getting the rent in advance) instead of energetically working their land themselves, which would ultimately pay them better, besides causing improvements on their farms to appear which would give perceptible evidence of progress and advancement. The progress at present is slow and gradual, but there is always some improvement and with the broadening of view which is always the result of education combined with the influence exerted on their minds by the success which attends the efforts of their progressive neighbours, there is every reason to hope that the Indians of the Sarnia, Kettle Point and Stony Point reserves will yet acquire for themselves a position in the community and in the esteem of their fellow citizens fully as high as that of any other body of people in the section of country in which they live.

Temperance and Morality—Over seventy years ago Sir John Colborne, then Lieutenant-Governor of Upper Canada, sought to remove the Indians from what was then called the Upper St. Clair reserve, on the ground that the reserve was too convenient to the American side and that this fact placed them so much under the control of the traders there that he considered that they should be removed from the evil influence which their position subjected them to. The comparative ease with which intoxicat-

ing liquors could be obtained on the American side has always been an obstacle in the way of the authorities here in their endeavours to prevent the Indians from being injured by their fondness for liquor. This still remains true. However, the laws recently enacted on the American side are very strict against supplying liquor to Indians, and this, by increasing the difficulty they experience in getting intoxicants, has contributed to a greater sobriety than formerly. There are still too many instances of drunkenness among the Indians, but these instances are mostly confined to a few well known characters, the great majority being sober and temperate in their habits.

With regard to morality, while there are exceptions, there are many on these reserves whose morals are beyond question. The Christian instruction given during the last seventy or eighty years has had its effect, and when one reflects on the short space of time that has elapsed since the influences of religion and civilization were brought to bear on this people, all feelings of disappointment are removed and replaced by feelings of encouragement and hope.

I have, &c.,
WILLIAM NISBET,
Indian Agent.

PROVINCE OF ONTARIO,
GOLDEN LAKE AGENCY,
KILLALOE STATION, April 1, 1908

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Reserve.—This reserve is situated on the southern end of Golden lake, Renfrew county.

Tribe.—These Indians belong to the Algonquin tribe.

Vital Statistics.—During the past year there was an increase of 2 in the band under my care, making the population 107.

Health and Sanitation.—The health of the Indians on the Golden Lake reserve is very good. There was no disease of any kind since last return, only one man had typhoid fever last fall and he is all right again. Their houses are pretty clean and most of the Indians on this reserve are just as clean as any other people.

Occupations.—The principal occupation of these Indians is working in the lumber camps in winter, and on the river in summer; as they are all pretty good drivers, they get good pay. These young Indians will not farm much if they can get money by working out.

Education.—The children are doing very well and I think we have a very good teacher. There was a good attendance last quarter for a cold winter.

Religion.—The Indians of this reserve are Roman Catholics.

Temperance.—There is not much liquor used on the reserve now. There are some young men who will drink as long as they get liquor, and there is a chance of getting it any way they go on the train.

The last two seasons were very dry around this country and the Indians had very little crop, and some of the little they did sow scarcely grew at all.

I have, &c.,
MARTIN MULLIN,
Indian Agent.

PROVINCE OF ONTARIO,
GORE BAY AGENCY,
GORE BAY, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report concerning the Indians of this agency for the year ended March 31, 1908.

COCKBURN ISLAND BAND.

Reserve.—This reserve is situated on the northwest side of Cockburn island, which lies immediately west of Manitoulin island. It has an area of about 1,250 acres.

Population.—This band has a population of 53.

Health and Sanitation.—The health of the band is generally good; no epidemics have raged on the reserve. The sanitary regulations are observed and appreciated.

Occupations.—Forest, farm and stream are the resources of these Indians; they farm on a small scale, and have very good garden and root crops. Their principal occupations are working in the lumber woods, making ties and posts in winter, and loading boats and peeling ties and posts in the summer.

Buildings, Stock and Farm Implements.—Their buildings are neat, clean and comfortable, and fairly well furnished. Their construction shows considerable skill and adaptability to requirements. They have some cattle and horses and other stock. The implements and vehicles they buy are modern and of a good quality.

Education.—There is no school on the reserve, but an arrangement has been made to have the children educated at the Wikwemikong industrial school.

Characteristics and Progress.—These Indians are sober, industrious and law-abiding, making a good living by their thrift.

Temperance and Morality.—The absence of liquor on the island has a good effect, and the isolation of the Indians has kept them in their primitive state of morality, above the average.

General Remarks.—These Indians are industrious, sober and moral, adapting themselves more and more to the ways of the white man, and including more and more to agricultural pursuits and the manufacture of timber.

WEST BAY BAND.

Reserve.—This reserve lies in the township of Billings, at the head of Honora bay, Manitoulin island, and comprises in all 13 square miles. The soil is sandy clay loam and clay, producing good crops; it is timbered with hardwoods with patches of cedar and other soft woods.

Population.—This band numbers 329.

Health and Sanitation.—Sanitary measures are fairly well carried out. The houses are neat and clean and whitewashed outside and in. The deaths that have occurred were mostly due to the white plague and grippe; no fevers or other contagious diseases made an appearance.

Resources and Occupations.—The chief occupation of the Indians is farming, in which they make good progress. Some thirty families reside permanently on their

farms and are doing well. They also work in the lumber camps in winter, and load vessels and peel ties and posts in summer. During this winter the resident members of the band cut about 415,000 feet of elm and ash into saw-logs, which would net them nearly $4,565. Sugar-making, berry-picking and fancy wares are also sources of revenue.

Buildings, Stock and Farm Implements.—The buildings are mostly of log, hewed, and neat and clean. There is a marked improvement in the furnishings of the houses; nearly every house has a sewing-machine, and organs and other musical instruments are in many homes. Their stock of cattle and horses is increasing in number and quality. The implements purchased are modern, and are being well cared for.

Education.—A fine school-house has been erected in West Bay village. Many of the pupils read and write well, both in Indian and in English. In addition to the regular courses, sewing and the making of all kinds of clothing is taught, some material being supplied by the department to facilitate the work.

Characteristics and Progress.—These Indians are industrious and law-abiding as a rule. They are copying the white settlers in many respects, improving the roads and spending considerable in addition to the usual statute labour on repairs, and are doing away with the old Indian ways of living.

Temperance and Morality.—Along these lines there are few complaints excepting for intemperance.

General Remarks.—This band is progressive. A store and post office is kept by a member of the band; and following the lead of the white settler and agriculturist, they are improving their lands and repairing the roads. The past season was not favourable for grain and hay, but the root crops were good. The winter has been long and mild; all kinds of stock have wintered fairly well. The Indians are well dressed, and drive good horses and vehicles.

OBIDGEWONG.

This band consists of only nine persons. Their reserve is situated on the west shore of Lake Wolsley, Manitoulin island. The area is about 400 acres. Some of it is exceptionally well timbered with hardwood. The members of this band depend largely on the soil for maintenance. They are good bushmen, and in winter make ties and posts, and in the summer earn quite a sum peeling ties and posts and loading vessels.

SHESHEGWANING BAND.

Reserve.—This reserve is situated in the township of Robinson, Manitoulin island. Its area is about 5,000 acres. It is fairly well timbered with hardwood, cedar and spruce.

Population.—This band numbers 166.

Health and Sanitation.—The health of this band is poor; the sanitary regulations are well carried out, and the houses are neat and clean. Their clothing is well made and adapted for their work.

Occupations.—Farming and gardening are their chief occupations. Some sixteen families reside permanently on their farms, cultivating the land and raising stock. Others are employed in the camps and loading vessels.

Buildings, Stock and Implements.—Their buildings are mostly of logs hewed outside and in. They are kept clean and neat, some of them being furnished with sewing-machines, musical instruments, and other luxuries. Their stock is well cared for. Cattle, horses and pigs are numerous. The implements used are modern. Covered buggies, democrats and wagons are in general use, and a threshing-machine is owned by the band.

Education.—The school is well attended. Good work is being done, not only in teaching the usual courses, but in practical housework. The cutting out and manufacture of clothing is taught the girls, and some of the work shows unusual skill.

Characteristics and Progress.—Those of the band who are farmers are doing well, but need more cleared land. The insufficiency of water has always been a drawback heretofore to those living on the farms, but the department having drilled four wells on the farms, a good supply has been secured. The farmers' children are the best educated and appear to have more inclination to steady pursuits.

Temperance and Morality.—As a whole, the band is fairly temperate, some families are rather unsettled, but appear to be improving.

General Remarks.—Some of the members of this band are good farmers. The Sampsons and Negonnewenahs have erected good houses, where they reside permanently. The past year was not good for hay and grain, but the root crop was good and all stock has wintered well. By thrift and industry these Indians keep themselves well provided with money.

I have, &c.,

R. THORBURN,

Indian Agent.

PROVINCE OF ONTARIO,
MANITOWANING AGENCY,
MANITOWANING, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report concerning the Indians of this agency for the year ended March 31, 1908.

WHITEFISH RIVER BAND.

Tribe or Nation.—These Indians belong to the Ojibbewa tribe.

Reserve.—The reserve of this band is situated near the mouth of the Whitefish river, on the north shore of the Georgian bay. It contains an area of about 10,600 acres. A goodly portion of the land is suitable for agriculture, the remainder is woodland.

Population.—The population of this band is 92.

Health and Sanitation.—The general health of the band during the past year has been good; all necessary precautions have been observed in respect to cleaning and whitewashing their buildings.

Occupations.—The occupations engaged in by these Indians are farming, lumbering, hunting, berry-picking, fishing, making mats and baskets and sugar-making.

Buildings.—Their buildings are of log and frame construction, and present a clean and tidy appearance.

Stock.—They have very little stock.

Farm Implements.—They have not many farm implements, but what they have are ample for their requirements.

Education.—There is not any school on this reserve at present, it being impossible to secure the services of a competent teacher.

Characteristics and Progress.—These Indians are fairly industrious and easily obtain employment at good wages. They are law-abiding and are making fair progress.

Temperance and Morality.—They are fairly temperate and up to the standard in morality.

POINT GRONDIN BAND.

Tribe or Nation.—These Indians are Ojibbewas.

Reserve.—The reserve of this band is located east of Collin's inlet, on the north shore of Georgian bay. It contains an area of 10,100 acres. A large portion of this reserve is suitable for agriculture, the remainder is woodland.

Population.—The population of this band is 47.

Health and Sanitation.—The health of this band has been good, no contagious diseases have been prevalent during the year.

Occupations.—They farm on a very small scale, fish, hunt, pick berries in the summer, work at the lumber mills, load barges and work in the camps in winter.

Buildings.—They have very comfortable log dwellings.

Stock.—They have scarcely any stock.

Farm Implements.—They have very few farm implements.

Education.—They have no school on the reserve. The children attend school at Wikwemikong.

Characteristics and Progress.—These Indians are fairly industrious, but they do not as yet devote as much attention to agricultural pursuits as is desirable.

Temperance and Morality.—They are a moral people, and intemperance is rare among them.

WHITEFISH LAKE BAND.

Tribe or Nation.—These Indians are of the Ojibbewa tribe.

Reserve.—The reserve of this band is situated about 12 miles from Sudbury, on the Algoma branch of the Canadian Pacific railway, where there is a station called Naughton. It has an area of 43,755 acres. A large portion of the reserve is suitable for agriculture.

Population.—The Indians of this band number 168.

Health and Sanitation.—The health of these Indians has been fairly good. There have been no epidemics, and all the resident members of the reserve have been successfully vaccinated.

Occupations.—These Indians engage in gardening and hunting. They also fish, act as guides, and work in the lumber and mining camps.

Buildings.—Nearly all their buildings are constructed of logs, and they are kept in a fair state of repair.

Stock.—Their stock is numerically small.

Farm Implements.—They have but few farm implements.

Education.—There is a day school on this reserve, but the attendance is small, as the parents do not take any interest in the education of their children.

Characteristics and Progress.—They are fairly industrious and of the average intelligence, but make very slow progress in the way of farming. A large number of these Indians devote their whole time to hunting and trapping.

Temperance and Morality.—They are fairly temperate and moral.

TAHGAIWININI BAND.

Tribe or Nation.—These Indians belong to the Ojibbewa tribe.

Reserve.—These Indians have a reserve at Wahnipitae on the north shore of Georgian bay, but the greater portion of them live on the unceded portion of Manitoulin island. Their reserve contains an area of 2,560 acres, which is all wild land.

Population.—The population of this band is 198.

Health and Sanitation.—These Indians have enjoyed very good health, observed the sanitary regulations very well and keep their premises in good order.

Occupations.—Farming is the principal occupation of these Indians.

Buildings.—Their buildings are composed principally of logs, neatly constructed and kept in good state of repair.

Stock.—Their stock is of average quality and very well cared for.

Farm Implements.—They are fully equipped with all kinds of farm implements.

Education.—Facilities for the education of those members who reside on the unceded portion of Manitoulin island are within easy reach of all the children of this band at Wikwemikong.

Characteristics and Progress.—These Indians are mostly quite industrious, they are law-abiding and steadily improving in agricultural pursuits.

Temperance and Morality.—They are fairly temperate and are up to the standard in morality.

MAGANATAWAN BAND.

The members of this band who reside on the Manitoulin island number 41. They live at West Bay and on the unceded portion of Manitoulin island, where they successfully farm and garden. In the winter they find employment in the lumber camps. This reserve, together with the affairs of its Indians, is under the control of the Parry Sound superintendency.

SPANISH RIVER BAND, DIVISION NO. 3.

The members of this band number 363. They reside on the unceded portion of Manitoulin island. Their general measure of advancement is identical with that of the Indians of the unceded portion of Manitoulin island, with whom they are included in the agricultural and industrial statistics.

SUCKER LAKE BAND.

Tribe or Nation.—These Indians belong to the Ojibbewa and Ottawa tribes.

Reserve.—The reserve of these Indians is principally situated in the fourth concession of the township of Assiginack, Manitoulin island. The area of the reserve is 599 acres. A goodly portion of this reserve is suitable for agriculture.

Population.—This band has a population of 12.

Health and Sanitation.—The health of these Indians for the past year has been very good, and sanitary precautions are encouraged in every respect.

Occupations.—Farming is the principal occupation engaged in by these Indians.

SUCKER CREEK BAND.

Tribe or Nation.—The Indians of this band belong to the Ojibbewa and Ottawa tribes.

Reserve.—This reserve is situated in the northern part of the township of Howland, Manitoulin island. It contains an area of 1,665 acres. A fair portion of the reserve is unsurpassed as agricultural land, the remainder is timber and grazing land.

Population.—This band has a population of 93.

Health and Sanitation.—The general health of these Indians for the past year has been good. Sanitary measures are very well observed.

Occupations.—They engage in general farming and stock-raising. During the summer season some of them find steady employment at the large lumber mills at Little Current.

Buildings.—The buildings on this reserve stand well in comparison with those in the township.

Stock.—These Indians are improving their stock from year to year, and they find a ready market for the same from both resident and outside buyers.

Farm Implements.—They are fully equipped with modern farm implements.

Education.—There is a day school on this reserve, which is competently conducted, and the children are making fair progress in their studies.

Temperance and Morality.—They are fairly temperate and up to the standard in morality.

SHEGUIANDAH BAND.

Tribe or Nation.—These Indians belong to the Ojibbewa and Ottawa tribes.

Reserve.—This reserve lies in the northwestern part of the township of Sheguiandah. It contains an area of 5,106 acres. A goodly portion of this reserve is suitable for agriculture, the remainder is grazing land.

Population.—The population of this band is 104.

Health and Sanitation.—The general health of these Indians during the past year has been very good. No epidemic has appeared among them. They keep their houses and persons clean and tidy.

Occupations.—Farming is their chief avocation. Sugar-making, basket-making, and berry-picking are also engaged in at different seasons of the year, and they also find employment in loading vessels with lumber at Little Current during the season of navigation.

Buildings.—The buildings on this reserve are very comfortable and neatly constructed. The dwellings are as well furnished as those of the average settler.

Stock.—These Indians do not keep much stock.

Farm Implements.—They have an ample supply of farm implements.

Education.—There is an excellent day school on this reserve, which is competently conducted, and the parents appear alive to the benefits to be obtained by sending their children regularly to school. The children are making very good progress in their studies.

Characteristics and Progress.—These Indians may be said to be progressing. They are intelligent, law-abiding and well behaved.

Temperance and Morality.—They are both moral and temperate in their habits.

SOUTH BAY BAND.

These Indians belong to the Ojibbewa and Ottawa tribes.

They occupy a portion of the unceded part of Manitoulin island. They number 63. Their general measure of advancement is identical with that of the Indians of Manitoulin island, unceded, band, with whom they are included in the agricultural and industrial statistics.

INDIANS OF MANITOULIN ISLAND, UNCEDED.

Tribe or Nation.—These Indians belong to the Ojibbewa and Ottawa tribes.

Reserve.—This reserve comprises the eastern end of the Manitoulin island, easterly of Haywood sound and Manitoulin gulf. It contains an area of about 105,000 acres. A goodly portion of this reserve is land of excellent quality for farming, the remainder is timber and grazing land.

Population.—These Indians number 666.

Health and Sanitation.—The general health of these Indians during the past year has been fair. There have been no epidemics, and, although the death-rate exceeds the birth-rate, this can be accounted for from natural causes, such as deaths from old age, and very young children. The majority of their dwellings are kept neat and clean and are comfortably furnished.

Occupations.—Many of these Indians are learning to follow agricultural pursuits on a more comprehensive scale. Some of them engage in fishing, lumbering, making fancy bark-work and baskets, and berry-picking.

Buildings.—Their log and frame dwellings are generally very comfortable, commodious, and neatly and tastefully constructed. Barns and other buildings are kept in a fair state of repair.

Stock.—Their stock is of the average quality, and more attention is given to the raising thereof.

Farm Implements.—They are fully equipped with all kinds of modern farm implements and machinery.

Education.—Unsurpassed facilities for the education of the Indians are within reach of all children on this reserve. The boys' and girls' industrial institutions and boys' and girls' day schools at Wikwemikong are conducted by a competent staff of teachers, and there are also good day schools at South Bay and Wikwemikongsing.

Characteristics and Progress.—These Indians are becoming more industrious from year to year as is evidenced by their growing interest in general farming. They are law-abiding and are specially to be praised for the work they accomplish each year in road improvements.

Temperance and Morality.—There are a few Indians of this band who will indulge in strong drink at every opportunity, but, on the whole, they may be classed as temperate and moral.

I have, &c.,
C. L. D. SIMS,
Indian Agent.

PROVINCE OF ONTARIO,
MISSISSAGUAS OF ALNWICK,
ROSENEATH, June 10, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to submit my annual report in connection with the Alnwick Indians for the twelve months ended March 31, 1908.

Reserve.—This reserve is in the township of Alnwick, in the county of Northumberland, and contains about 3,308 acres, including Sugar island, in Rice lake. There are now about 1,473 acres rented to white men, who paid over $1,800 in rents during the past year; the remaining cleared lands are worked by the locatees.

Population.—The band numbered 251 on the first day of April last, when I took the census. We had 8 births, 6 deaths during the year, one woman married into the band and one man was struck off the list, having resided in the United States for over five years.

Health.—The members of the band, with few exceptions, are healthy; one boy, one woman and one man died during the year of consumption, and one woman is now very low with the same disease.

Occupations.—Nine families are farming and doing very well on the whole, selling milk to cheese factories, fat hogs, eggs, making baskets, and gathering wild rice in the fall. Many of the young men work for farmers during harvest, in the lumber camps in the winter and on the rivers during the spring and summer seasons; during the past year they earned $6,679. They do but little fishing, trapping and hunting.

Buildings, Stock and Implements.—The buildings are mostly frame, and very well kept inside and out. The machinery used in general is up to date.

Education.—Mr. F. Joblin teaches the children at school, and they attend very well indeed. They and their parents like him very much.

Characteristics and Progress.—These Indians are fencing their holdings with the Wertman fences, and I am sure that there is not a better fenced reserve in Ontario on the whole.

Temperance and Morality.—Some of the young men will take liquor whenever they can get it, and often become intoxicated; but they will not give evidence against the person from whom they get it. Few of the older men will take it, and they look upon it as disgraceful to do so.

Allow me to add that I have taken very great pains to get my tabular statement as accurate as possible, having written to many of the absentees for information, and it is as nearly correct as I could possibly make it.

I have, &c.,

J. THACKERAY,

Indian Agent.

PROVINCE OF ONTARIO,
MISSISSAGUAS OF THE CREDIT,
HAGERSVILLE, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of the Mississaguas of the Credit for the year ended March 31, 1908.

Reserve.—The reserve comprises 6,000 acres, 4,800 of which are in the township of Tuscarora, county of Brant, and 1,200 acres in the township of Oneida, county of Haldimand. The reserve is well adapted for mixed farming, and nearly one-half is under lease to white men.

Population.—The population is the same as last year—267.

Health and Sanitation.—The health of this band has been good; there were only two deaths among the adults from natural causes and one accidental death. There was no contagious disease of any kind. Vaccination of the children was attended to by Dr. McDonald, the medical attendant. This reserve consists of five blocks of 1,200 acres each, and each division is looked after by a councilman, who performs the duties of a board of health, and gives splendid satisfaction. The Indians willingly comply with all sanitary measures.

Occupations.—Farming is the principal occupation; a few of the young men without land hire with farmers near the reserve for the summer, quite a number of men and women spend the summer in the fruit-growing districts and return to the reserve for the winter.

Indians who stay at home and cultivate their land are the only ones making any progress.

Buildings.—There has been considerable improvement during the past year on buildings, both barns and dwellings being overhauled and rebuilt. A very large proportion of the houses are very comfortable and well kept, the public buildings are a credit to the reserve.

Stock.—This band has a good assortment of stock; the quality is improving each year.

Farm Implements.—Members of the band requiring them are well equipped with all modern farm implements.

Education.—There is only one school upon this reserve, centrally located, taught by Miss L. Mitchell, a most efficient teacher. Parents are showing more interest by having their children attend more regularly than in the past. The children who attend make good progress. The band pays the teacher and caretaker and supplies all books and material needed.

Characteristics and Progress.—Those working their land are making considerable progress. Although they did not raise as much grain and hay as the previous year, the price was so much better that the total income was much greater than last year. Sufficient was retained by them to bring their stock through the winter in good condition. Those who work out during the summer get through the winter fairly well. Some few depend largely on their interest money and what little they receive in rent, and only work when necessity compels them, consequently are always hard up.

Generally speaking they are law-abiding and feel their position keenly when brought before a magistrate, or the agent, for an offence, and it is very seldom one of them is brought up a second time.

Temperance and Morality.—These Indians are, generally speaking, temperate in their habits. A temperance society meets regularly at the council-house, and nearly one half the adult members belong to it. Only one case of immorality was brought to my notice. I at once had one of the persons, who did not belong to the band, removed from the reserve. This seems to have a good effect upon the Indians.

I have, &c.,
W. C. VAN LOON,
Indian Agent.

PROVINCE OF ONTARIO,
MISSISSAGUAS OF RICE AND MUD LAKES,
KEENE, May 19, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on Indian affairs in my agency for the year ended March 31, 1908.

RICE LAKE BAND.

Reserve.—The Rice Lake reserve is located on the north shore of Rice lake, in the township of Otonabee, county of Peterborough. It contains about 1,860 acres, of which about 860 is cleared : 130 acres of this is under lease to white tenants, while the locatees cultivate the remainder of said cleared land.

Population.—The total population shown by the present census is 92.

Health and Sanitation.—During the past year there has been very little sickness on the reserve.

Occupations.—A few of the young men work in the lumber camps, while others work their locations and do exceptionally well trapping in the spring, also hunting in the fall and acting as guides for the tourists on the lake. A few gather wild rice also.

Buildings.—All the buildings are of log and frame and very well kept. The church and grounds are very neat.

Stock.—The members of this band have several good horses and milch cows, also hogs and poultry.

Farm Implements.—Those who farm have all the modern machinery.

Education.—They have a very bright, cosy little school-house, where the children attend school with the white children, and I believe are making splendid progress in their studies.

Temperance and Morality.—These Indians are well behaved and law-abiding; some of them will have liquor whenever it can be had, but the majority, I think, are temperate.

MUD LAKE BAND.

This reserve is located on the shore of Mud lake, in the township of Smith, county of Peterborough. It contains about 2,000 acres, of which a little over 300 acres is cleared.

Population.—The total population shown by the present census is 191.

Health and Sanitation.—Some of the homes are very clean and well kept. They have had very little sickness during the year.

Occupations.—Some engage in farming or as farm help; others work in the lumber camps in winter and spend the summer rowing tourists on the lakes. Some of them do remarkably well trapping and hunting.

Buildings.—The buildings are kept in very good repair. With the exception of the hall and church, they are all of log and frame.

Stock.—These Indians have quite a number of horses and milch cows, also hogs and poultry.

Farm Implements.—Those who farm here have all the modern machinery.

Education.—The children who attend school regularly, are making very fair progress. The teacher, Mr. McCue, takes a very great interest in his pupils.

Temperance and Morality.—There are a few of these Indians who indulge in strong drink whenever it can be had; but the majority of them are very temperate and moral.

I have, &c.,

WM. McFARLANE.

Indian Agent.

PROVINCE OF ONTARIO,
MISSISSAGUAS OF SCUGOG.
PORT PERRY, June 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour of submitting my annual report and tabular statement for the year ended March 31, 1908.

Reserve.—The reserve of the Mississaguas is situated on the northwestern portion of Scugog island, about 8 miles from Port Perry, Ontario county.

Population.—The total population is 35. One female member died of consumption and there was one marriage during the year.

Health and Sanitation.—The health of the Indians is generally good. The women are neat and careful about their homes.

Occupations.—The older members of the band spend most of their time hunting and fishing, while the younger generation farm or engage as farm help.

Buildings, Stock and Farm Implements.—The buildings are good and modern. The quality or quantity of live stock does not improve at all. The farm implements are good, but not properly cared for.

Education.—The school near at hand, although not separate to the Indians, is conducted by a good teacher. The children are progressing favourably, and the parents are encouraging them.

Characteristics and Progress.—The young men are industrious and willing to work, still not good managers for themselves.

Temperance.—Intemperance is of occasional occurrence among the older members, but the young men are quite temperate in their habits.

I have, &c.,

A. W. WILLIAMS,
Indian Agent.

PROVINCE OF ONTARIO,
MOHAWKS OF THE BAY OF QUINTE,
BELLEVILLE, April 13, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report for the Tyendinaga band of Indians for the year ended March 31, 1908.

Reserve.—The Mohawk reserve, in the township of Tyendinaga, in the county of Hastings, which reaches from the town of Deseronto, on the east, to the township of Thurlow, on the west, and borders on the north shore of the bay of Quinté, contains in round numbers about 17,000 acres of land; the greater part of this reserve is good tillable land under cultivation; the remaining part consists of pasture-lands partly timbered with second-growth trees and scrubby bushes and shallow plains, rock and marshes.

Population.—The population of this band is 1,338, being an increase of 11 over last year.

Health and Sanitation.—The general health of the Indians of this band has been fairly good through the past year; there have been some slight outbreaks of small-pox, which were promptly overcome.

Resources and Occupations.—The principal occupations of the Indians on this reserve are farming and working at cement and in factories in Deseronto; the land is strong and productive when well cultivated, and some of the farms are kept in a first-class state of cultivation, while others are badly tilled and full of foul weeds and badly drained. Many of the fences are out of repair, and others that are needed are wholly gone; some few new fences were built and others repaired last season, a noticeable improvement over last year.

There are some sixty odd leases to white people on the Indian lands. The rents from these tenants are in part applied on improvements to the buildings and fences, and the balance goes towards the living expenses of the locatees.

The crops on the reserve were fairly good during the year, but hay and straw were rather light owing to some very dry weather, which has left some members of the band rather short of fodder during the spring.

The Bay of Quinté Mohawk Agricultural Association, established five years ago on the reserve, has held five very successful fairs on the grounds at the council-house, and the interest in this enterprise seems to be well maintained. The stock and products exhibited at these fairs compare favourably with such exhibits of the whites in the surrounding townships.

Buildings.—Some new buildings have been put up during the year, and considerable repairs have been made, which were badly needed.

Stock.—The horses and cattle on this reserve are chiefly of mixed breeds and of a very good quality.

Dairying is carried on to quite a considerable extent among the Indians of this band, who sell their milk to the cheese factories. The cows are very well cared for, but do not look as well this season as usual, owing to the scarcity of hay.

Pigs are raised by many and sold at a good profit.

Farm Implements.—All kinds of modern implements are used on the reserve, as well by the Indians as by the white tenants, but are poorly housed in winter.

Education.—There are four public school-houses on the reserve, and some Indian children attend adjoining schools. Some of these schools were closed for a short period owing to the impassable condition of the roads this winter. The attendance and progress of the children are fairly good.

Characteristics and Progress.—The sober and industrious Indians are law-abiding and are bettering their circumstances and properties, but some of the indolent and dissipated are getting more miserable and destitute as they advance in years.

Temperance and Morality.—Some members of this band still use liquor to excess, and their means is thus wasted, not only for the liquors, but in paying fines and costs in cases where they do not go to prison; a majority of the members of the band are temperate in their habits, and quite a few are teetotalers, but intemperance is the curse of this band.

Most of the adult members attend church somewhere on Sundays, and the children go to Sunday school. The morality of this band is reasonably good, except for drinking and a poor regard for their obligation to pay debts.

I have, &c.,

J. G. RAMSDEN,

Inspector of Indian Agencies and Reserves.

PROVINCE OF ONTARIO,
MORAVIANS OF THE THAMES,
DUART, April 18, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report of the Moravians of the Thames for the year ended March 31, 1908.

Reserve.—This reserve comprises part of the northern portion of the township of Orford, in the county of Kent, bordering on the River Thames, equally distant from Bothwell, Thamesville and Highgate, and contains about 3,010 acres of fairly good land.

Population.—The population is 331, two in excess of last year.

Health and Sanitation.—The general health has been very good. Measles and whooping-cough have been prevalent among the children; only one case proved fatal and the school had to be closed for a short time. The doctor made 284 visits, filled 583 prescriptions at the office, and travelled about 2,208 miles in attending the Indians on the reserve. The annual circular is carefully explained and well observed by the majority.

Occupations.—They all pretend to be farmers, but I am sorry to say they do not work hard enough at it to make it a success. Some fish, hunt and trap, and many work for neighbouring farmers and receive good wages and too often the farm is neglected.

Buildings.—The houses on this reserve are frame and log. Two new log houses were erected this year, and the Indians are making the old ones more comfortable and improving their places very much with wire fences, as there is no material for rails, and the old ones are done.

Stock.—Their stock comprises horses, cattle and hogs, and these are steadily improving.

Implements.—Those who really farm are well supplied with all the modern implements.

Education.—The education of the children is looked after by the present council much better than formerly. There is only one school, centrally located and within the reach of all and efficiently taught by Miss Ross. Three pupils attended school every day during the year and obtained their reward.

Characteristics and Progress.—They are all law-abiding and fairly industrious, never having any trouble if they leave liquor alone. They are progressing well in some respects, they work out more and make a better living for themselves and families, but not so much progress on their farms.

Temperance and Morality.—Many of the band are strictly temperate and opposed to the use of intoxicants in any form, while others use them whenever they can obtain them; otherwise we have no fault to find with their morality.

I have, &c.,

A. R. McDONALD,
Indian Agent.

PROVINCE OF ONTARIO,
OJIBBEWAS OF LAKE SUPERIOR, EASTERN DIVISION,
SAULT STE. MARIE, April 28, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report for the year ended March 31, 1908, of this agency; embracing Garden River, Batchawana and Michipicoten bands of Indians.

GARDEN RIVER BAND.

Reserve.—The Garden River reserve consists of about 29,000 acres lying to the east of the town of Sault Ste. Marie on St. Mary's river. It is watered by Garden river, Echo river and Root river, which empty into the St. Mary's river. It is traversed from east to west by the Canadian Pacific railway. Garden Station on said railway is situated within the reserve. The majority of the band reside along the

north bank of St. Mary's river, where they cultivate small plots of land. The land in this portion of the reserve is level and sandy, only a small portion being valuable for farming lands. At a distance of from a half mile to a mile, a range of bluffs extends from east to west, beyond which the land is chiefly rough, although there are some portions suitable for agricultural purposes.

Population.—This band consisted at the last census of 444 souls.

Health and Sanitation.—The general health of the band during the year has been fairly good, but consumption seems to be on the increase among them and a number of deaths have resulted from that disease. The death-rate has been greater during the past year than for some years previous.

Occupations.—Besides cultivating small plots of land along the shore of the river, where they live, the members of the band take out, under permission from the department, ties and timber on their reserve. Others find employment in the winter months in the lumber camps. During the past winter several thousand ties have been taken out by the members of the band on their reserve. Owing to the fact that lumber operations have not been carried on in the neighbourhood during the past winter to as great an extent as in previous seasons, work has been scarce and difficult to obtain, and the result is that many members of the band have suffered considerable hardship during the winter season just closed.

Buildings.—Some very comfortable frame buildings have been erected on this reserve, the rest are log houses. The public buildings are the council-house and lock-up.

Stock.—Horses and cattle are raised to a small extent, and some swine.

Farm Implements.—The farm implements consist of ploughs, harrows and cultivators, with one or two mowers and a few hay-rakes, besides the hand-tools used in farming and gardening.

Education.—The facilities for education consist of two public schools, one under the regulations of the Church of England, the other Roman Catholic. Both of these schools are fairly well attended. There are two churches on the reserve, one Anglican, the other Roman Catholic.

Characteristics and Progress.—Some of the Indians of this band are industrious, but most of them inclined to be improvident.

Temperance and Morality.—Like almost all Indians who reside near a city or town, some of this band are, when opportunity offers, inclined to intemperance. Others keep fairly within bounds, while a few are strictly temperate.

BATCHAWANA BAND.

Reserve.—This band formerly held a reserve on Lake Huron, near Sault Ste. Marie, which they surrendered to be sold for their benefit. They afterwards repurchased about 1,600 acres on the shores of Goulais bay, in the township of Kars, where a small number of them now reside. This is the only land now held by the Batchawana band except 5 acres purchased for them by the department at Gros Cap, on the St. Mary river.

Population.—This band numbers in the neighbourhood of 380 souls.

Health and Sanitation.—The health of this band during the past year has been reasonably good.

Occupations.—The majority of this band reside on the Garden River reserve, where they cultivate small portions of land and engage in working in the camps and similar occupations during the winter and river-driving in the spring. Those residing at the mission on the small reserve at Goulais Bay are chiefly fishermen, as well as a number who reside on the shores of Batchawana bay. In the winter-time they mostly endeavour to obtain employment in the lumber woods.

Buildings.—The buildings are mostly log erections, with a few frame houses.

Stock and Implements.—Some members of this band who reside on the Garden River reserve possess some stock, such as cattle, horses and pigs. Those who reside at the other points have but little stock.

Education.—The only school directly belonging to the band is situated at Goulais Bay, where some 24 children attend. During the whole of 1907 this school was closed, because no teacher could be obtained for it. The children of the members of this band who reside at Garden River attend the two schools there.

Temperance and Morality.—The majority of this band are not inclined to teetotalism, as many of them do not hesitate to use intoxicating liquors when they can obtain them. A number of them are temperate.

Michipicoten band.

Reserve.—The Michipicoten band has a small reserve at the mouth of the Michipicoten river, on Lake Superior, containing 9,000 acres. A portion of this reserve was surrendered to the Algoma Central Railway Company and embraces the Michipicoten harbour, a terminus of said railway, and the outlet of the products of Helen mine, which is an extensive iron deposit worked by the Lake Superior Corporation of Sault Ste. Marie.

Population.—The population of the portion of the band visited by me during the past year is about 160. The rest of the band reside along the main line of the Canadian Pacific railway, and have a small reserve at Chapleau and another at Missinaibi.

Health and Sanitation.—During the past year a great deal of sickness has occurred among this band, resulting in many deaths.

Occupations.—The chief occupations are hunting and trapping and in transporting goods in canoes over the inland rivers and lakes.

Buildings.—There are five houses on this reserve, which is called Little Gros Cap, a Roman Catholic church and a small school at Michipicoten River, which is attended by children of the band residing in that neighbourhood.

Temperance and Morality.—The members of the band are chiefly temperate, in the absence of intoxicating liquors, although it is said some of them indulge extensively in patent medicines containing a considerable percentage of alcohol.

I have, &c.,

WM. L. NICHOLS,
Indian Agent.

Province of Ontario,
Ojibbewas of Lake Superior, Western Division,
Port Arthur, March 30, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report and statistical statement for this agency for the year ending March 31, 1908.

fort william band.

Reserve.—The reserve is situated south of the Kaministiquia and Mission rivers extending to Lake Superior on the east, and now contains some 11,550 acres; since

last year about 100 acres was sold for a military rifle range. The reserve is well timbered, a large acreage is rocky; there is sufficient good land for agricultural purposes.

Population.—The band numbers 280 persons.

Health and Sanitation.—The general health has been good; precautions are observed in regard to keeping premises and houses clean.

Occupations.—Since their removal from the old mission a year ago, a number of them have been clearing new lots; little farming has been done for two years. These Indians hunt, fish, pick berries in season, act as guides, and a few work in the lumber camps in winter.

Buildings.—The buildings are log and frame and are comfortable.

Stock.—Individually they own a number of horses and stock.

Education.—The St. Joseph's Indian industrial school for boys and girls, in charge of the Rev. Sisters of St. Joseph's mission, has an attendance of 60 to 70; under their careful and efficient teaching advancement is noticeable each year. A new school at the Mountain and one at Mission Bay are just completed and ready for opening.

Characteristics and Progress.—The Rev. Brothers of the mission set a good example to the band which could be profitably followed. The majority are law-abiding.

Temperance and Morality.—Two paid constables among them have caused some improvement the past year in the matter of obtaining liquor. Their morals are good with a few exceptions.

RED ROCK BAND.

Reserve.—The reserve is situated on the Nipigon river above Lake Helen and contains 486 acres, well timbered; the land is a clay loam suitable for agricultural purposes. The greater number of the band live at the Mission on Lake Helen.

Population.—The band numbers 231 persons.

Health and Sanitation.—The health has been generally good with exception of a number who suffered from bad colds the early part of the present winter. Precautions are observed in keeping premises and houses clean.

Occupations.—These Indians engage in the following occupations: acting as guides to fishermen-tourists during the summer on the Nipigon river, at which they earn good wages, as canoemen for the Hudson's Bay Company and Revillon Bros. in transporting supplies, in winter hunting and trapping.

Buildings.—Their houses are mostly log and are comfortable and warm.

Stock.—They own individually several horses and cattle.

Farm Implements.—The ploughs, harrows and other implements are cared for by the chief.

Education.—The Lake Helen Mission school, under the charge of Miss Barker, shows fair advancement; the parents evince a desire to have the children educated.

Characteristics and Progress.—The majority are law-abiding and industrious. They might with good profit to themselves pay more attention to farming; there is a ready market for all kinds of vegetables and hay.

Temperance and Morality.—A number of them require strict measures on the part of the chief and constable with regard to obtaining liquor; otherwise their conduct is fairly good.

NIPIGON BAND.

Reserve.—The regular reserve is at the mouth of Gull river and contains 7,500 acres; the land is good where cleared, is well timbered with spruce, tamarack, poplar and jack-pine. There are two other divisions of this band—one at Grand Bay, containing 585 acres, the other at Jackfish Island, which apparently has not been surveyed.

Population.—The population of the band is 453 persons.

Health and Sanitation.—The general health of the band has been good. During the early part of this winter grippe was prevalent.

Occupations.—Acting as canoemen and packers for the Grand Trunk Pacific survey, the Hudson's Bay Company and Revillon Bros., as guides for fishing-tourists, and hunting, are the chief occupations. They do little towards cultivation except the raising of potatoes.

Education.—A school has been opened under the Rev. F. B. Fuller at the Grand Bay reserve, which has an average attendance of 12 and will likely improve during the summer.

Characteristics and Progress.—They are well spoken of by those who employ them and are industrious as far as their occupations go. They have shown some improvement in the last two years in paying more attention to their gardens.

Temperance and Morality.—Being far removed from where intoxicants are sold, they have few opportunities to indulge. They appear to be of good morals and law-abiding.

PAYS PLAT BAND.

Reserve.—This reserve is situated near the mouth of Pays Plat river, Lake Superior, and contains 640 acres, well timbered and the greater portion good land.

Population.—The population of the band is 57 persons.

Health and Sanitation.—The health of the band has been generally good, their houses and premises are kept clean.

Occupations.—Hunting and fishing are the chief occupations; they also act as guides to explorers and tourists, and pick berries in season. If they could be induced to pay more attention to agriculture, they could find a ready sale for hay and root crops.

Buildings.—These are mostly small log cabins, but are comfortable and cleanly.

Education.—They have no school at present.

Characteristics and Progress.—They do no farming except the raising of potatoes, and are industrious at their various occupations.

Temperance and Morality.—Their conduct in this respect has little to complain of; the chief has good control over the band.

PIC BAND.

Reserve.—The reserve is situated on the Pic river, Lake Superior, and contains 800 acres, divided into 25 farms facing on the river; the land is sandy loam and raises fine potatoes and vegetables; the majority of the lots are well fenced.

Population.—The band numbers 218 persons.

Health and Sanitation.—The general health of the band has been good, their houses and premises are kept clean.

Occupations.—These Indians fish and hunt, and pick blueberries in season, and numbers find employment as canoemen and packers for the Grand Trunk Pacific survey, the Hudson's Bay Company and Revillon Bros.

Buildings.—The houses are constructed of logs, are comfortable and clean.

Education.—The school was closed most of the year for want of a teacher; it has been re-opened with a fair attendance.

Characteristics and Progress.—Their gardens are well fenced and show considerable work in raising potatoes; the chief holds influence over them sufficient to keep them at work; they have improved the road along the front.

Temperance and Morality.—They give little to complain of, liquor is removed from them, their conduct is good.

LONG LAKE BAND.

Reserve.—The reserve is situated on the northwest end of Long lake and contains 640 acres.

Health and Sanitation.—The health of the band has been very good.

Occupations.—Their chief occupation is hunting, a large number of the young men are employed as packers and canoemen transporting supplies for the Grand Trunk Pacific survey, the Hudson's Bay Company and Revillon Bros.

Buildings.—They have only three houses, and these are used only in the summer.

Characteristics and Progress.—They are fine hunters and industrious in this respect and law-abiding, but do very little land cultivating.

Temperance and Morality.—The opportunity to indulge in liquor is removed, and their general conduct is good.

Education.—A school has been open during the year; though the attendance is small, the children show improvement and are quick to learn.

I have, &c.,

NEIL McDOUGALL,
Indian Agent.

PROVINCE OF ONTARIO,
PARRY SOUND SUPERINTENDENCY,
PARRY SOUND, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report and statistical statement showing the condition and progress of the various bands in this superintendency for the year ended March 31, 1908.

PARRY ISLAND BAND.

Reserve.—This reserve is situated on the eastern shore of the Georgian bay, near the town of Parry Sound. It contains an area of 27 square miles. The soil is sandy loam; 60 per cent of the area is suitable for agriculture.

Population.—The population of this reserve (exclusive of those Indians and half-breeds residing on the reserve who do not belong to the band) is 98.

Health.—The health of the Indians of this band has been only fairly good. There has been no epidemic nor any contagious disease among them; rheumatism and bronchial troubles seem to be the most prevalent disorders.

Occupations.—The resources of this reserve are: agriculture, grazing, lumbering, wood-cutting, bark-peeling and loading lumber on vessels at the adjacent mills. Hunting and fishing are not followed as sources of profit or livelihood. During the summer months the young men are engaged as guides for tourists and health-seekers.

There are a few who pay some attention to farming and live more independently and comfortably than those that follow the other pursuits.

The crops were very light this past season; the cold and backward spring, followed by a severe drought, shortened the crops and fodder.

Buildings and Stock.—The buildings are comfortable and dwellings clean. I may say the Indians do not seem to comprehend the benefit of warm stabling for their stock; doubtless they will understand the food-saving benefit of warm stables after this winter.

Education.—The educational affairs of this band are in a fairly satisfactory condition. There are two schools on this reserve about 6 miles apart. They are taught by female teachers, each holding a third-class certificate. There are 26 children of school age on the reserve, besides those children residing on the reserve who do not belong to the band, some of whom attend the schools, so that the attendance has been fairly good during the past year. The progress of the pupils has been as good as could be expected.

Characteristics.—The Indians of this band are a sober, industrious, law-abiding, moral people.

Temperance.—The members of this band are a most temperate body. None of them have been reported to me as being intoxicated or indulging in intoxicants.

Many of their homes are provided with good furniture, sewing-machines, organs, &c.

SHAWANAGA BAND.

Reserve.—This reserve is situated about 3 miles inland on the Shawanaga river, about 23 miles from Parry Sound, the district seat. The Sudbury-Toronto branch of the Canadian Pacific railway runs through the reserve, which will be a boon to the Indians by creating a market for hemlock bark, railway ties, fence posts, telegraph poles, &c. The reserve contains an area of 14 square miles. The soil is light, sandy loam, about 50 per cent of agricultural and grazing land; residue, rock and marsh.

Population.—This band has a population of 108 persons.

Health.—The health of this band for the past year has been very indifferent; in the early part of the winter grippe was prevalent throughout the district and several of the members of the band were sufferers from this malady and any who had weak lungs or bronchial troubles seemed to suffer the most from this influenza.

Occupations.—The Indians of this band are not inclined to agriculture. They have never had any one to teach them by example. They have spent the most of their summers in the employment of the fish companies on the Georgian bay, and in the winter months they work in the lumber camps.

The young men of this band are principally engaged in fishing during the months of May and June, and, when the tourists and health-seekers resort to the Georgian bay islands, they get ready employment as guides The women and children do a thriving business gathering berries. In the winter they work in the lumber camps. This last year many of them were engaged making railway ties, fence posts and telegraph poles around their homes on the reserve.

Buildings.—The buildings on this reserve are not as comfortable as some of the buildings on other reserves in the agency. This is principally owing to the great distance from saw-mills and the hardship and expense of getting lumber and proper building material. Since the railway has been built, the facilities are such that I hope in a few seasons to see the Shawanaga band domiciled in as comfortable homes as their white neighbours.

Education.—The children of this band are taught in the school-house on the reserve, where the exercises are conducted by a female teacher holding a third-class certificate. The course of studies is that authorized by the department. The number of children of school age is 22. The progress of the pupils during the past year has been very fair.

Temperance and Morality.—I am pleased to say that no case of intemperance among the members of the band has been reported to me during the past year, notwithstanding that hundreds of railway navvies of all nationalities were employed on the railway construction through the reserve. The members of this band stand high in conduct and morality.

WATHA BAND (FORMERLY GIBSON).

Reserve.—This reserve is situated between the southern end of Muskoka lake and the Georgian bay. It contains an area of 25,582 acres.

Population.—This band has a population of 143.

Health.—The health of this band for the year has been fairly good.

Occupations.—The members of this band depend chiefly on farming for a living; in the winter months some of the young men find employment in the lumber camps, and in the summer months many of them are engaged at peeling hemlock bark, while others find employment as guides for tourists who frequent the inland lakes and the Georgian bay.

Buildings.—The buildings on this reserve are good, substantial and comfortable, constructed principally in the same style as the Quebec habitant domiciles. The stables and outhouses are far superior to those on any other reserve in this superintendency.

Characteristics.—This band may be considered the most industrious and progressive of any in the superintendency. The chief is building a saw-mill, and will have it running in a few months. This will prove a boon to every resident member of the band for lumber and shingles.

Education.—There is one school on this reserve, conducted by a male teacher, holding a third-class certificate. The number of children of school age is 34. The school is under the supervision of the Methodist Missionary Society. The progress of education is not as good as it should be.

Temperance and Morality.—The conduct of the band in these respects is fairly good.

MAGANATAWAN BAND.

Reserve.—This reserve is situated about 5 miles from the mouth of the Maganatawan river. It contains an area of 11,370 acres.

Population.—There are only 29 members of this band who reside permanently on the reserve; the remainder reside on the Manitoulin island.

Health.—The health of the resident members of this band for the past year has been exceptionally good.

Occupations.—The members of this band cultivate gardens, growing vegetables, potatoes, corn, beans and pease. They find, during the summer months, constant employment loading barges and boats in the lumber-yards at good wages. Hunting and fishing for a livelihood are about abandoned by this band.

Buildings and Stock.—The buildings are small, neat and comfortable. The outhouses are very fair. Their live stock is very fair grade stock. The owners endeavour to imitate their French-Canadian neighbours in housing their cattle and horses.

Education.—There is no school on this reserve. The children who attend school do so at the public school at Byng Inlet, about two miles' distant from the reserve, when there is a large and well conducted school.

Characteristics and Temperance.—The Indians of this band are an industrious and well behaved people. They are as temperate as any of the bands in the superintendency.

HENVEY INLET BAND.

Reserve.—This reserve is situated on one of the arms or inlets of the Georgian bay almost midway between Byng Inlet and French river. It contains an area of 30 square miles; 60 per cent of this reserve is rock and marsh. The Sudbury-Toronto branch crosses the northeast corner of the reserve. The Canadian Northern Railway is building its lake port at the mouth of the Key river, on the west side of the reserve.

Population.—This band has a population of 170.

Health.—The health of this band for the past year has been very fair.

Occupations.—Hunting, fishing and berry-picking seem to be the favourite occupations of these Indians. Some of the young men work around the lumber-yards at the mills in the summer months.

Education.—The number of children of school age on the reserve is thirty-one. There is one school on the reserve. There has been no teacher for the greater portion of the year. Owing to the isolated position of the reserve, female teachers do not care about exiling themselves. I have no doubt as soon as the railway trains are running by mid-summer, there will be no trouble in securing a teacher.

Buildings and Farm Implements.—The buildings belonging to the members of this band are of a fair order, their dwelling houses being whitewashed and kept in a very neat and sanitary condition. Their village is located an a sloping hill overlooking the bay. Their outhouses are not warm or comfortable for the cattle and horses. Their agricultural implements are not numerous beyond some hoes and rakes.

Characteristics.—The members of the band are a stalwart body of men in appearance who take more delight in the past of their ancestors than in the improved condition of civilization of the present.

Temperance and Morality.—The conduct of this band in these respects is of an exceptionally high order and leaves nothing to be desired.

I have, &c.,

D. F. MACDONALD,
Indian Superintendent.

PROVINCE OF ONTARIO,
SAUGEEN AGENCY,
CHIPPAWA HILL, May 2, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report for the affairs of this agency for the year ended March 31, 1908.

Reserve.—The Saugeen reserve is located in the township of Amabel, county of Bruce, on the east shore of Lake Huron. It comprises an area of 9,020 acres. The soil is principally of a light swampy character, and about one-half of the total area of the reserve is still under timber.

Population.—The Chippewas of Saugeen number 405 persons.

Health and Sanitation.—With the exception of some who suffer from hereditary diseases like consumption, the health of the Indians has been generally good. The medical officer of the reserve attended to the vaccination. No epidemic of contagious disease has occurred among the Indians since my last report; but two-thirds of the deaths during the year were caused by consumption. The Indians are giving increased attention to the observance of hygienic precautions, and to the matter of ventilation and cleanliness.

Occupations.—The greater number of Indians of this reserve are engaged part of the year in cultivating their locations. Many also work amongst the white people as hired help. The soil is of an inferior quality for agricultural purposes, and the Indians are slow to learn the best methods of working it; therefore do not get the best results, as they otherwise would.

Buildings.—As the population of this reserve varies but little from year to year, the number of new buildings erected is not great, but improvements and additions are constantly being made to the buildings already erected.

Stock.—The live stock on this reserve has not increased or decreased to any appreciable extent during the year. Horses are the most valuable animals that the Indians possess, although most families have cattle, hogs and poultry.

Farm Implements.—The Indians have a sufficient number of implements necessary for the cultivation of the land and harvesting the crop.

Education.—No other question of general interest receives more attention on the reserve than that of education. The reserve is divided into three school sections, in each there is a fairly well equipped brick school-house. Many of the parents send their children to school with great regularity, but there are also cases when the assistance of the truant officer is required. On the whole the schools are doing good work and the progress of the pupils is quite up to the average.

Characteristics and Progress.—Although all the Indians are sufficiently industrious to earn a very good living, most of them lack the perseverance and thrift required to make successful farmers. Generally they are law-abiding and each year sees them adding gradually to their home comforts.

Temperance and Morality.—There are few, if any, of the Indians of this band that could be called habitual drunkards; but there are some who occasionally give trouble in this respect.

I have, &c.,
JOHN SCOFFIELD,
Indian Agent.

PROVINCE OF ONTARIO,
SIX NATION INDIANS,
BRANTFORD, April 9, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of the Six Nations of the Grand River, for the year ended March 31, 1908.

Reserve.—The reserve comprises the township of Tuscarora and part of the township of Onondaga, in the county of Brant, and a portion of the township of Oneida, in the county of Haldimand. It contains 43,696 acres.

Population.—The Six Nations consist of—

Mohawks	1,754
Oneidas	354
Onondagas	347
Tuscaroras	394
Cayugas	1,008
Senecas	210
Delawares	169
	4,236

The number of tribes comprising the Six Nations Confederation was not always the same. Prior to 1714, it was the Five Nations, when the Tuscaroras were admitted ; since which time it has been called the Six Nations.

Health and Sanitation.—There have been several cases of typhoid; but, considering the circumstances surrounding the patients, the recoveries have been remarkable. Lobar pneumonia of an epidemic form was prevalent during the early winter, from which there were several deaths. Two cases of scarlet fever of a mild type occurred in Ohsweken, necessitating the closing of the school there.

During the year 6,745 patients were treated at the medical office on the reserve, 1,529 visits were made, 1,939 patients seen on calls, and 6,008 miles travelled by the physicians on the reserve.

The board of health is doing good work in enforcing sanitary measures. The council-house, where large gatherings are held, is regularly and thoroughly cleaned after each meeting, carbolic acid being freely used. The general health has been fairly good. The physician has delivered several lectures on sanitation and the laws of health, to good audiences, and the Indians appeared to be deeply interested in the subject.

To provide for a case of tuberculosis in an advanced form, the patient has been isolated in a house especially prepared for him, thus removing infection from a large family occupying a small house.

Occupations.—General farming is the chief means of making a living. The crops for the past year were good, particularly the hay crop, which realized good prices. Many of the younger members frequently seek employment off the reserve.

Buildings.—There is a steady improvement in the buildings on the reserve and also the fencing. As fencing material is becoming very scarce, the Indians are putting up wire fences. Many new buildings and barns have been erected by the assistance of loans from the council.

Stock.—The Indians are taking greater interest in the raising of stock. Many of them supply milk to factories off the reserve, and are not depending as much on the raising of crops as formerly.

Farm Implements.—All implements required on a farm are used by many members of the band, while those who depend entirely upon farming for a livelihood are well supplied with the most modern implements.

Education.—There are ten schools under the control of a board consisting of nine members: five Indians chosen by the Six Nation Council, three whites representing the joint interest of the New England Company, the Church of England and the Methodist Church, and the Indian Superintendent representing the department; and one school under the control of the Seventh Day Adventists on the reserve. This last school has not been continuously open during the school months. Six white and five Indian teachers are employed, the Ohsweken being a graded school having two teachers. A teachers' convention was held in the month of October at the Ohsweken school, at which great interest was evinced by both teachers and trustees. In April the teachers joined the Brant County and City of Brantford Teachers' Institute in a convention in Brantford.

The services of the Brant County Inspector have been secured for the reserve schools, with beneficial results. A truant officer has also been appointed, but there has not yet been time to see any results from his work. Three Indian pupils from the Ohsweken school wrote at the entrance examination of the high school at Caledonia. There are four attending the Caledonia high school, two at the Brantford Collegiate Institute, one at Hagersville high school, two at the Brantford Business College and one at Woodstock College. There is also an Indian from this reserve studying medicine at Toledo, Ohio.

Characteristics and Progress.—The Indians are generally industrious. Those who are unable to work land for want of stock, seek employment off the reserve. The Six Nation Indians are most law-abiding and steadily improving. During the year there were built one brick house, four frame and four log houses, ten barns and five stables, besides a large quantity of fencing and several new wells. A natural gas

company drilled two wells on the reserve, supplying a good flow of gas which is now used in the council-house, the Baptist church, and several private dwellings at a small cost.

The Farmers' Institute of the South Riding of Brant held an afternoon and evening meeting in the council-house on February 3, 1908. Both meetings were well attended. A Woman's Institute in connection with the Farmers' Institute also holds regular meetings and has occasioned great interest among the women of the reserve. The Six Nation Agricultural Society, wholly under the management of Indians, held its three days' annual fair, and was as great a success in exhibits and attendance as any of its predecessors. None but Indians are permitted to compete.

The public roads are kept in good condition under the direction of forty-five pathmasters, who are appointed by the chiefs in council at their January meeting. The Indians built a 60 foot steel bridge across McKenzie creek at a cost of $1,500, and concrete abutments for another bridge at a cost of $750.

Temperance and Morality.—The Indians are generally temperate in their habits, and assist any effort to prevent the use of intoxicants on the reserve.

Several temperance societies hold regular meetings on the reserve and are increasing in membership.

I have, &c.,
GORDON J. SMITH,
Indian Superintendent.

PROVINCE OF ONTARIO,
STURGEON FALLS AGENCY,
STURGEON FALLS, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement concerning the Indians of this agency for the year ended March 31, 1908.

NIPISSING BAND.

Tribe or Nation.—This band belongs to the Ojibbewa tribe.

Reserve.—The reserve is situated on the north shore of Lake Nipissing, two miles west of the town of North Bay. It now contains an area of 24,240 acres.

This band last year surrendered a large portion of its reserve north of the Canadian Pacific railway. During the past summer this was surveyed and subdivided into three townships, namely, Pedley, Beaucage and Commanda, which will be sold and the proceeds placed to the credit of the band.

The reserve is remarkably well situated for navigation as well as railway accommodation, as the Canadian Pacific railway crosses the reserve. These with the Big and Little Sturgeon rivers, the Duchane and their tributaries, all combine to make Nipissing an exceptionally picturesque and convenient reservation. This tract is the most valuable agricultural land in the district.

Population.—This band has a population of 245.

Health.—The health of the members of this band for the past year has been exceptionally good.

Occupations.—The principal occupations of these Indians are hunting, fishing and acting as guides to tourists and surveying parties. A few cultivate small farms

along the lake front, and during the winter months they work in the adjacent lumber camps. At present a number are employed on surveys and forwarding supplies. The women gather berries and make moccasins and fancy bead-work for sale, which sells readily in the adjoining villages.

Buildings and Stock.—They are improving their buildings, especially their houses. These are kept clean and comfortable. They have only a few small barns and stables, as they do not pretend to farm. They have very little stock, only a few horses, cows, pigs and poultry.

Farm Implements.—They have a few ploughs and harrows, and are well supplied with spades, shovels, hoes and garden tools. All the cultivation is done with these implements.

Education.—There are two good schools on the reserve, one at Beaucage and the other at the Garden Indian village. They are presided over by competent teachers holding certificates. The attendance is good and the progress of the pupils satisfactory.

Characteristics.—Many of the Indians of this band are industrious, but few think of providing much for the future, while others are idle.

Temperance and Morality.—There are still a few of this band who are addicted to liquor, and, whenever an opportunity occurs, they will get it. During the past year several fines were imposed on persons supplying them. The morality of these Indians is good.

DOKIS BAND.

Tribe or Nation.—This band belongs to the Ojibbewa tribe.

Reserve.—The reserve belonging to this band is situated at the head of French river where it leaves Lake Nipissing. It contains an area of 30,300 acres, consisting of the two large Okindawk islands. These Indians have recently surrendered the pine timber on this reserve, which is to be disposed of for their benefit. A portion of the band resides on the smaller island adjoining Lake Nipissing, leaving the larger portion uninhabited.

Population.—The population of this band is 79.

Health.—The health of this band for the year has been good.

Occupations.—The occupations of these Indians are hunting and fishing and acting as guides to tourists, while others work in the lumber camps and on the drives. Those who live on the reserve cultivate small gardens, but do not farm to any extent.

Buildings and Stock.—The buildings of this band are few in number. The stock comprises only a few ponies and cattle.

Education.—There is no school on the reserve, although a school has been frequently offered to these Indians; they do not wish to have their children educated.

Characteristics.—The members of this band are not industrious like the others in this agency, but seem to be content in their present state. They do not take to farming, but rather to hunting, &c.

Temperance and Morality.—The conduct of this band in these respects is the best in this agency.

TEMAGAMI BAND.

Tribe or Nation.—This band belongs to the Ojibbewa tribe.

Reserve.—No reserve has yet been given to this band. The members live around the shores of Lake Temagami, while quite a number live on Bear island, near the Hudson's Bay Company's post. Lake Temagami is situated 72 miles from North Bay and is reached by the Timiskaming and New Ontario railway operated by the Ontario government.

This lake is noted for its clear water and numerous islands and is a prominent tourist resort.

Population.—This band has a population of 97.

Health.—The health of the members of this band for the past year has been good.

Occupations.—The principal occupations of these Indians are hunting and fishing and acting as guides to tourists, who frequent Temagami in large numbers each summer. They cannot supply the demand, which necessitates bringing in outside guides from the other reserves. They do not farm, as they have no land selected yet for them. Some cultivate small gardens along the lake front.

Buildings and Stock.—The buildings of this band are very limited. A number of these Indians live in small houses along the lake shore, while others have comfortable houses on Bear island.

Education.—This band has a good school on Bear island, Lake Temagami, in charge of Miss Burke, a competent teacher. The children appear to be progressing with their studies.

Characteristics.—The members of this band are a bright, intelligent body and take more readily to the modes of living of white people. They are noted as expert canoemen, a number being employed by the Hudson's Bay Company for this purpose.

Temperance and Morality.—The Indians of this band are very reticent about giving any information against persons supplying them with liquor. A few are addicted to it and do not lose an opportunity of securing it when it is available. Fines have been imposed upon persons supplying them with liquor, which will likely prove beneficial. They are moral in their habits.

MATACHEWAN BAND.

Reserve.—This reserve is situated north of Fort Matachewan on the Montreal river, and comprises an area of 16 square miles. This was given to the band under the new Treaty No. 9.

Tribe.—This band belongs to the Ojibbewa tribe.

Population.—The band numbers 96.

Health.—The health of this band for the year has been good.

Occupations.—The occupations of this band are hunting and fishing for their own use.

Buildings.—A number live in log cabins, but the majority use tents entirely.

Stock.—This band has not any stock.

Characteristics and Progress.—The Indians of this band are a happy, contented body, and appear to be well satisfied with their surroundings. They devote their time entirely to hunting, and dispose of their furs to the Hudson's Bay Company at Matachewan post.

Temperance and Morality.—They are moral in their habits, and with few exceptions are temperate.

I have, &c.,

GEO. P. COCKBURN,

Indian Agent.

PROVINCE OF ONTARIO,
THESSALON AGENCY,
THESSALON, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report relating to the affairs of the several bands of Indians in my agency for the year ended March 31, 1908.

THESSALON RIVER BAND.

Reserve.—This reserve is situated on the north shore of the North channel of Lake Huron, about 6 miles east of the town of Thessalon, and has an area of 2,307 acres.

Population.—The population of this band is 128.

Health and Sanitation.—The health of this band has been good; there were no epidemics of any kind during the past year. The Indians are particular about cleaning up their back yards and whitewashing their houses.

Occupations.—They load vessels and work in saw-mills in summer, and work in the lumber woods in winter.

Buildings.—Their buildings are clean and comfortable.

Stock.—Their stock is not much good.

Farm Implements.—Most of their work is done with hoes.

Education.—They have a good school-house on the reserve, but there are not very many children living there.

Religion.—They are all Roman Catholics and are attended by a missionary.

Characteristics and Progress.—These Indians are industrious and law-abiding and earn a good deal of money.

Temperance and Morality.—The majority of them are fairly moral in their habits.

MISSISSAGI RIVER BAND.

Reserve.—This reserve is situated on the east side of the Mississagi river and west of the Penewabekong river, and comprises an area of about 3,000 acres.

Population.—There are 123 of this band on the reserve; some are at Biscotasing.

Health and Sanitation.—The health of this band has been fairly good during the year; no epidemics of any kind were reported.

Occupations.—They work in saw-mills and at loading vessels during the summer, and in the lumber woods in winter.

Buildings.—Their buildings are fairly good and clean.

Stock.—Their stock is not much good.

Farm Implements.—They have a few hoes and rakes.

Education.—They have a good school-house on the reserve, and a good teacher. They are taking more interest in education than they formerly did.

Characteristics and Progress.—These Indians are fairly moral. Some of them are very fond of whisky, but the majority of them are temperate and law-abiding.

SERPENT RIVER BAND.

Reserve.—This reserve lies east of the Serpent river, and is bounded on the south and west by Lake Huron and on the north by the Serpent river. The reserve contains 27,282 acres.

Population.—The population of the band is 115.

Health and Sanitation.—These Indians are quite healthy; they keep their houses neat and clean.

Occupations.—They find plenty of work in the mills at Cutler and Spragge, and earn good wages.

Buildings.—They have very good buildings and keep them clean and tidy.

Stock.—They have some horses, a few pigs and some poultry.

Farm Implements.—They have a few ploughs and harrows, and some shovels, hoes and rakes.

Education.—They have a good school and a good teacher. The children are getting along very well.

Characteristics and Progress.—These Indians are industrious and moral and are good citizens. They have a good church, which they attend regularly, and they appear to be improving.

SPANISH RIVER BAND.

Reserve.—This reserve is situated on the north shore of the North channel of Lake Huron along the south bank of the Spanish river. It is bounded on the south and west by the waters of the North channel and on the north by the Spanish river, and contains 28,000 acres. As to residences, this band is divided into three communities; two of these are dwelling on the reserve and are in my charge, viz.: Sahgamook, a beautiful point running out into the North channel—and on the left bank of the Spanish river. The third community is on the Manitoulin island under the jurisdiction of Indian Agent Sims.

Population.—The population of these two communities is 253; some are at Biscotasing and are in charge of Indian Agent Nichols.

Health and Sanitation.—These Indians are healthy and clean and have no epidemics among them.

Occupations.—These Indians make good wages working in saw-mills and loading vessels with lumber. They grow a good quantity of potatoes and catch enough fish for their own use.

Buildings.—They have good buildings and keep them clean.

Stock.—They have a good assortment of horses and cows. Their pigs and poultry are not so good.

Farm Implements.—They have several ploughs and harrows, and a good number of hoes and rakes.

Education.—They have a good school-house at Sahgamook and one at Spanish River. They have a splendid teacher in each school and both are well attended.

Characteristics and Progress.—These Indians are industrious and law-abiding and generally speaking are quite comfortable.

Temperance and Morality.—These Indians, as to temperance and morality, will compare favourably with any white settlement of the same size in the country. They are good citizens and appear to be improving.

I have, &c.,

SAMUEL HAGAN,

Indian Agent.

PROVINCE OF ONTARIO,
WALPOLE ISLAND AGENCY,
WALPOLE ISLAND, April 15, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit my annual report on the Chippewas and Pottawattamies of Walpole Island reserve for the year ended March 31, 1908, together with statistical statements for the same period.

Reserve.—This reserve consists of Walpole, St. Ann's and Squirrel islands, and is bounded on the west by the River St. Clair, on the north and east by the Chenail Ecarté and on the south by Lake St. Clair, and has an area of 40,480 acres of first-class land for farming and grazing purposes.

Population.—The population of the Chippewa band is 573 and that of the Pottawattamie band 176.

Health and Sanitation.—The health of the Indians has been fairly good, smallpox being the only epidemic on the reserve. It was discovered on the reserve on January 31, 1907, and was not stamped out until June, 1907; but no deaths occurred from the disease. The sanitary conditions of the reserve are fairly good.

Occupations.—The majority of the Indians work among the farmers and factories of the surrounding country both summer and winter, and make good wages. There is a small number that farm, and they are doing fairly well.

Buildings.—There have been no new buildings erected during the year by the Indians, but there has been a number that have built additions to their houses and made other improvements on their farms. The Methodist Missionaary Society has built a fine residence for the missionary, which is a credit to the society and the reserve.

Stock.—The stock that is kept by the Indians is of a good grade, especially cattle.

Farm Implements.—The Indians keep the supply of implements up to their requirements, and have all they need for use.

Education.—There are two schools on the reserve, one at the southern end and the other on the west side of the River St. Clair. Both schools are well attended, and the pupils are making fair progress. Quite a number of the children attend the industrial schools.

Characteristics and Progress.—The Indians are law-abiding and fairly industrious, but prefer working out where they can get paid every two weeks rather than work their own land. Those that work away from the reserve make good wages, but do not save any money.

Temperance and Morality.—There is a marked improvement as to temperance. The authorities on the American side of the river have taken a very active part in stamping out the liquor evil, and, if the work is kept up for a short time, it will be the means of putting a stop to the drinking habit, and will improve the morals of the Indians; in fact, the action already taken has made quite an improvement.

I have, &c.,

J. B. McDOUGALL,
Indian Agent.

PROVINCE OF QUEBEC,
ABENAKIS OF BECANCOUR,
BECANCOUR, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit herewith my annual report and statistical statement for the year ended March 31, 1908.

Reserve.—The reserve of the Abenakis of Becancour is situated on the west side of the Becancour river, in the county of Nicolet. The area of the reserve is exactly 135⅝ acres.

Tribe.—The Indians of this band are called the Abenakis of Becancour.

Population.—The population of this band is still 27, including absentees.

Health and Sanitation.—There was no epidemic on the reserve this year. Most of the Indians are enjoying good health. Sanitary precautions are observed.

Occupations.—The chief occupation of the Abenakis of Becancour is the cultivation of their lands; they work in the shanties in winter and on the drive in spring. Most of them are poor and several are unable to work.

Buildings.—The buildings are well maintained. There were no new ones erected this year.

Stock.—These Indians have some horses and several milch cows, all of fairly good breed. They have also some other stock, such as pigs, sheep and poultry.

Farm Implements.—They try to improve their land; they have the farm implements necessary for cultivation.

Education.—The school-house on the reserve is closed because the two children that are of an age to attend are away. The municipality of Becancour gives these children the privilege of attending the public school situated near the reserve.

Characteristics.—Most of these Indians are industrious. They are men capable of doing heavy work; they easily find employment in the shanties. They are more economical than formerly; very few of them make use of liquor.

Religion.—The Indians of this band are Roman Catholics; most of them attend to their religious duties well. Not having a church on their reserve, they attend the parish church, and their spiritual welfare is looked after by the parish priest, who acts as their missionary.

General Remarks.—These Indians are quite civilized. There are very few of them who are pure Indians, most of them are half-breeds, for the mothers of the young people are white women.

I have, &c.,
JULES R. DUBE,
Indian Agent.

PROVINCE OF QUEBEC,
ABENAKIS OF ST. FRANCIS,
ST. FRANÇOIS DU LAC, April 4, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the year ended March 31, 1908.

Reserve.—The reserve of the Abenakis of St. François de Sales consists of several pieces of land situated in the seigniories of St. François du Lac and Pierreville. The total area is 1,819 acres, 52 perches. The portion of the reserve occupied by the Abenakis is designated as No. 1217 on the official plan of the parish of St. Thomas de Pierreville, and contains 1,228 acres. The village is situated on the east bank of the St. Francis river, about 6 miles from its discharge into Lake St. Peter, and it is a very picturesque site.

Population.—The population of the band is 335.

Health.—There has not been any epidemic disease during the year; but there were some cases of tuberculosis.

Occupations.—The chief occupation of the Abenakis is the making of baskets and fancy-work. They make baskets all winter, and about the month of June most of the families go to the White mountains and to the watering places of the United States and Canada, where they sell their wares; they return in the fall. This industry is their chief source of revenue. There are also some families that hunt as well as make baskets; but what they realize from the former source is diminishing each year as game becomes more rare.

Farming is only a secondary occupation among the Abenakis of St. Francis. Some of them do no cultivation at all; others raise some vegetables. Some families cultivate a little more, but the sale of their baskets, which compels them to be absent a great part of the summer, prevents their giving the necessary attention.

Buildings.—The Abenakis build good houses, and several of them are very pretty and very comfortable.

Stock.—The Abenakis have some horses, a fair number of good cows, and some pigs.

Farm Implements.—These Indians have only a few farm implements, and what they have are of little value.

Education.—The education of the children is carefully attended to. All the Indians can read and write, and several of them have gone through a complete course of study at a classical college or other institution for higher education. There are two schools on the reserve : one Protestant, under the direction of the Rev. Richard Page, and the other, Roman Catholic, in charge of the Grey Nuns. The Roman Catholic school is a pretty little convent where the pupils may have a complete commercial course, including stenography and typewriting, and receive a diploma approved by the Superintendent General when they have passed the necessary examination.

Characteristics and Progress.—As a rule the Abenakis are industrious. They make baskets and the sale of these brings them in sufficient revenue to enable them to live comfortably, and some of them are rich; each family that returns in the fall is in possession of a good round sum, and, if they were more economical, they would be able to put something aside for hard times.

Temperance and Morality.—The morality of the Abenakis is good as a rule; nevertheless the abuse of liquor has caused some disturbance.

General Remarks.—The Abenakis of St. Francis are as civilized as the white people that surround them, and live in harmony with them. I believe there are no longer any pure-blooded Indians in the band; they have all more or less white blood in their veins. Many of them have lost the characteristics of the red men, and it is very difficult for one seeing them for the first time to recognize them as Indians. They all speak English or French, and make use of one or other of these languages in their dealings with white people; but in the family and in their meetings of council they speak Abenakis, which they keep up with religious care.

I have, &c.,

A. O. COMIRE,
Indian Agent.

PROVINCE OF QUEBEC.
ALGONQUINS OF RIVER DESERT.
MANIWAKI, April 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the year ended March 31, 1908.

Reserve.—Maniwaki reserve is situated on the Desert river at its confluence with the Gatineau river, and contains an area of 44,537 acres and 26 perches.

Population.—The population is now 407, an increase of 9 since last report.

Health and Sanitation.—There has been considerable sickness among the Indians on the reserve during the year. The death-rate has been considerably lower than usual, and the birth-rate much higher. It is difficult to induce the Indians to follow the sanitary instructions which are continually being read to them. A liberal supply of lime is furnished them each year by the department.

Occupations.—The general occupations of the Indians of this reserve are chiefly working in the lumber woods, hunting, trapping, river-driving and farming. The older members of the band make snow-shoes, axe-handles and canoes, while the women make mittens, moccasins, baskets and other fancy-work, and tan hides.

Buildings.—The buildings on the reserve are of log, with the exception of one frame building. Many of the Indians still reside in log shanties.

Stock.—There has been very little change in the stock during the year, and no loss, with the exception of two horses that died.

Farm Implements.—The Indians are fairly well supplied with farm implements and tools.

Education.—There are two day schools on this reserve. No. 1, Maniwaki school, is situated about one mile south of Maniwaki village near the main Gatineau road, and is taught by Miss Margaret McCaffrey.

No. 2, Congo school, is situated near Congo bridge, about 4 miles west of Maniwaki village, and is taught by Miss Rose H. Gilhooly. Owing to the lack of interest taken in education by the majority of the parents, it is a difficult task to keep up the attendance. There are a number of families whose children attend fairly well and parents seem anxious for the progress of their children.

Characteristics and Progress.—The Indians have made very little progress in farming during the year. The season was unfavourable for them in many ways. It will be remembered that the month of May last was cold and backward. Many of the Indians who went away to hunt in the spring remained away late, which was the

cause of a considerable amount of stubble-land being left unseeded. The hay crop was very good, but there was a very bad season for curing. The wages fell in the latter part of December, and there was not much employment at the decreased wages, which left a considerable number of young men unemployed during the months of January and February. The early part of the year was favourable for fur and the prices were good. Owing to a seizure of fur during the latter part of the year, the Indians were obliged to dispose of their fur at a considerable reduction.

Temperance and Morality.—The majority of the Indians of this band are addicted to drink and will go to any extremes to obtain liquor. On the other hand, there are a number of really temperate Indians who can compare favourably with any class of men. During the past year the morality of the Indians of this band has shown a decided improvement; no case of immorality came to my notice during the year.

General Remarks.—There were 3 deaths from drowning, 2 men and 1 woman. One of these occurred in Bitobee lake at Maniwaki, the other 2 were drowned on the upper Ottawa.

I have, &c.,
W. J. McCAFFREY,
Indian Agent.

PROVINCE OF QUEBEC.
AMALECITES OF VIGER,
CACOUNA, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit herewith my annual report accompanied by statistical statement in regard to the Amalecites of Viger for the year ended March 31, 1908.

Reserve.—The present reserve of the Amalecites of Viger is situated on the bank of the St. Lawrence river near the village of Cacouna. Most of the Indians are scattered over several counties. Those who remain at home suffer much from cold owing to the scarcity of wood. The government gives provisions as relief to the poorest of them from time to time, especially to several widows who are in utter destitution; some of them are old and ill and almost unable to work.

Vital Statistics.—The population of this band is 104, including the absentees. During the year there were 3 deaths.

Health.—The health of these Indians is good. An old man has been paralyzed for some years, and three widows are old and sick, a young man is also ill.

Resources and Occupations.—The chief occupation of these Indians in summer is the making of baskets and other fancy articles, which they sell to the strangers who come to spend the summer at Cacouna. The men often act as guides to sportsmen who go out on the water or fish. They also make snow-shoes and moccasins.

Religion.—All the Indians of this band are Roman Catholics so far as I can see.

Temperance and Morality.—With few exceptions, these Indians are temperate and moral.

General Remarks.—The Indians of this band are not making progress in farming; the young men go to the shanties some months in the winter, and earn a little money, which they spend as soon as they come out of the woods, which is the reason why most of them are poor and in distress, especially the widows.

I have, &c.,
EDOUARD BEAULIEU,
Indian Agent.

PROVINCE OF QUEBEC.
HURONS OF LORETTE.
JEUNE LORETTE, April 28, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit my annual report in regard to the Hurons of Lorette and other Indians settled in my agency, with a statistical statement for the year ended March 31, 1908.

Reserve.—The reserve of the village of the Hurons of Lorette, which is the only one that the tribe now owns, contains 26·75 acres. Most of the Indians reside near the ancient chapel. The latter always attracts the attention of strangers.

Population.—Since my last report the population has increased by 8; it is to-day 474 instead of 466, which it was last year. This number does not include the Indians who, although not residing on the reserve, live near it. Thus in the parish of Laval, county of Quebec, there is a family of Amalecite Indians composed of 9 persons who resided during the past year at St. Pierre de Charlesbourg, Quebec county, the head of which is still employed as game warden by the Quebec government; also 9 Abenakis Indians reside at St. Ambroise de Lorette, in Quebec county. Their chief occupation consists in the making of snow-shoes and Indian fancy wares, on the proceeds of which they live and support their families.

At St. Urbain, in the county of Charlevoix, there is an Abenakis family and a Montagnais family. The condition of these two families is still the same, although they have not been free from want. Abbé G. A. Girard, parish priest of the place, has been very attentive to their needs. Thus during the twelve months just passed, at his request and on his recommendation, the department granted relief at different times to these poor families. The combined population of these four groups of Indians, including the Huron population of the Lorette reserve, is 529.

Resources and Occupations.—I regret to observe that the special industry of the Hurons, that is to say the making of snow-shoes and moccasins, during the first part of the twelve months just passed was not flourishing. In addition to this, since December last the demand has decreased and the trade this year is almost nil. The heads of families on the reserve are obliged in order to support their families to go off to a distance in order to earn money in the surrounding towns.

The Indians engage but little in fishing, as fish have not been abundant; on the other hand they have done a good deal of hunting, and this has been both successful and remunerative; the prices of fur are very high.

Health.—The Hurons of the village cannot be reproached with uncleanliness. No contagious disease appeared among them. Nevertheless there was a good deal of illness during the year. This may be attributed to the age of those who were obliged to go far away and also to the unhealthy seasons of the year.

Education.—I observe with great pleasure, and in that I voice the views of all the Hurons of the village of Lorette, the completion of the construction of a new school. The band is unanimous in complimenting and thanking the department and the government of Canada for presenting the village with such a school as we now have. In the arrangement and building of this school all the laws of health have been observed. Its convenience and the whole arrangement of the building make it easy for the Sisters of Perpetual Help, who have charge of it, to perform the duties that devolve upon them in regard to the children entrusted to them by the parents and the

department. The progress of the pupils and the general success of the teaching have been much superior to those of previous years.

The pupils have shown an exemplary assiduity in following the studies. The missionary is perfectly satisfied. I can only praise the teaching sisters, who show admirable devotion to the children of the village.

Religion.—There is in my agency and residing on the reserve one Huron who belongs to the Anglican Church, and six others who belong to the Presbyterian Church. All the rest are Roman Catholics.

Temperance and Morality.—Nothing but praise can be given the Hurons of Lorette in regard to temperance. A temperance campaign and retreats have been conducted in the village with the object of promoting temperance. I have the satisfaction of saying that astonishing conversions have resulted therefrom. Some heads of families have altogether abandoned the use even moderately of liquor. Prosecutions have been instituted against vendors of beer and they have been sentenced. All the means that the law provides to keep up this good state of mind that reigns in the village and to keep away the tempters, those who try to sell liquor, are employed to maintain temperance.

As for morality, I have not heard any complaints on this subject, and I observe that the Hurons do not deserve any reproach.

I have, &c.,

A. O. BASTIEN,

Indian Agent.

PROVINCE OF QUEBEC,

IROQUOIS OF CAUGHNAWAGA,

MONTREAL, July 2, 1908.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—I have the honour to submit my annual report in regard to the Caughnawaga agency for the year ended March 31, 1908.

Reserve.—The Caughnawaga reserve is distant about nine miles from Montreal, on the south shore of the St. Lawrence river, opposite Lachine. The reserve contains an area of 12,000 acres.

Population.—The population is 2,165.

Birth Rate.—The band did not make much progress in numbers, owing to an abnormal number of deaths among the young people; the tribe had to mourn the loss of 33 of its members who were killed near Quebec in August, 1907, by the fall of the Quebec bridge.

Health.—The health of these Indians is fair; there is a slight improvement. It is to be remarked that many die in infancy, which might be prevented by a better knowledge of hygiene.

Occupations.—They work in the iron and wire machine shops at Lachine and Montreal, also on iron structural works, such as bridge-building and nutting the steel of large buildings. A few till their farms; others go to the lumber camps in winter, and in spring drive the logs; some make snow-shoes and lacrosses.

Buildings.—The place is improving, many old houses are being repaired, and new ones erected.

Stock.—These Indians are fairly well supplied with stock.

Farm Implements.—They have the most modern and improved implements.

Education.—These Indians have four schools. Three are in the village, two Roman Catholic, one for boys and one for girls, and a Protestant school for boys and girls. The fourth school in the bush is for the Roman Catholic boys and girls. The schools on the reserve could have a better attendance. Many parents send their children to colleges and schools and convents (not under the control of the Indian Department) outside the reserve.

Characteristics.—The younger generation of Indians are industrious and progressive. They are becoming more and more self-supporting.

Temperance.—There is no change. The Indians here are as temperate as in many white settlements, and there is no flagrant sign of immorality on the reserve.

I have, &c.,
J. BLAIN,
Indian Agent.

PROVINCE OF QUEBEC,
IROQUOIS OF ST. REGIS,
ST. REGIS, April 14, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit my report and statistical statement for the year ended March 31, 1908.

Reserve.—This reserve is situated on the banks of the St. Lawrence river, in the province of Quebec, including islands a little below Prescott, Ont., thence down stream opposite the village of Lancaster, Ont. On the opposite shore is the village St. Anicet, in the province of Quebec.

It contains an area of about 6,887 acres.

Population.—The population of this band is 1,475.

Health and Sanitation.—There was no epidemic on the reserve during the year, and the sanitary condition of the Indians' houses has been good. The health of the Indians has also been good, with the exception of a few affected with lung disease and grippe.

Occupations.—The principal occupations of these Indians are farming, hunting, fishing, trapping, running rafts of timber, also drive of logs in the spring-time, also acting as guides for tourists, doing monthly and daily labour with farmers and on railways, also manufacturing lacrosse sticks and baskets to a large extent.

Education.—There are two schools in operation on the reserve, one on Cornwall island and the other at St. Regis village. The schools are well supplied with school material and teachers, but owing to the lack of interest in the parents' not sending their children, the attendance is not what it should be.

Characteristics and Progress.—The Indians are still on the gain in cultivating their land and making improvements on buildings, and are well supplied with farm implements, in all making fair progress.

Temperance and Morality.—A good many of these Indians are men who do not drink; those that are most given to drink are the young men. Most of the Indians observe the laws of morality.

I have, &c.,
GEO. LONG,
Indian Agent.

PROVINCE OF QUEBEC,
LAKE OF TWO MOUNTAINS AGENCY,
OKA, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report, with statistical statement, for the year ended this day.

Reserve.—The land occupied by these Indians is situated on the Lake of Two Mountains, on the Ottawa river, province of Quebec, but the title is not vested in the Crown.

Population.—The population is 479.

Health and Sanitation.—The health of the Indians has been generally fairly good. There has not been any epidemic, nor any serious disease.

Occupations.—Some of the Indians cultivate land, some make barrel-hoops and baskets, while others go to the shanties.

Education.—There are two Methodist schools on the reserve. The parents are very negligent about the education of their children.

Religion.—The Methodists hold their religious services in their church. The Roman Catholics worship in the parish church.

Characteristics.—There is not much progress among these Indians. Several of them have ceased to cultivate land. Some of them are inclined to be lazy.

Temperance and Morality.—It pains me to say that some of these Indians are becoming drunkards more and more, and very debauched, including some of the young people, and this in spite of all my efforts to suppress drinking. These Indians go as far as Montreal to obtain liquor, and this is what makes a certain number of them besotted.

I have, &c.,

J. PERILLARD,
Indian Agent.

PROVINCE OF QUEBEC,
MICMACS OF MARIA,
GRAND CASCAPEDIA, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908, together with agricultural and industrial statistics for the same period.

Reserve.—The reserve is situated on the shores of a magnificent river, the Grand Cascapedia, and of Chaleur bay. This reserve has a splendid aspect. It contains 416 acres, 136 of which is cultivable and has a good fertile soil.

Population.—The population is 105.

Health and Sanitation.—There was no contagious disease this year, but the health has not been very good.

Occupations.—The Micmacs of Maria have many ways of making a living. There is little farming done, and some hunting and fishing. In summer the sportsmen employ them as guides and canoemen on the Grand Cascapedia river. Some also work in the shanties and at stream-driving in the spring; others are employed by farmers or work at home, making snow-shoes, snow-shovels and baskets. They also tan green skins, with which they make many shoe-packs for winter wear. These articles afford them their chief revenue.

Buildings.—Their buildings are small, with the exception of four or five, which are passable.

Education.—A good school has been built in the centre of the reserve, where the children can receive a good education. They learn English, French and Micmac.

Characteristics.—The Micmacs are generally skilful and industrious, but they are always poor, owing to their lack of economy and their improvidence.

Temperance and Morality.—The Micmacs of Maria are generally intemperate; but I must say that there are some who never taste any intoxicating liquor. Their morality is generally good, and they observe the laws of a Christian morality.

I have, &c.,

J. D. MORIN, Priest,
Indian Agent.

PROVINCE OF QUEBEC.
MICMACS OF RESTIGOUCHE,
POINTE LA GARDE, May 8, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR.—I have the honour to submit my annual report, together with agricultural and industrial statistics, for the fiscal year ended March 31, 1908.

Reserve.—This reserve is situated on the northern shore of the beautiful Restigouche river, in the county of Bonaventure, in the province of Quebec, opposite the town of Campbellton, N.B.

Tribe.—These Indians are all of the Micmac tribe.

Population.—The population is now 493; an increase of 8. There were 25 births and 17 deaths during last year.

Health and Sanitation.—The health of this band has been fairly good. Sanitary precautions are well carried out. They were free from any contagious disease during the past year.

Occupations.—A good many of these Indians subsist partly on the product of their farm. The young men work in the lumber woods during the winter months, stream-driving in the spring, ship-loading and working in the mills during the summer. They generally command the best wages for labour. Some are employed as guides and guardians for hunting parties. A few make baskets, snow-shoes, &c.

Buildings.—There are some good houses on this reserve, well furnished, also some very good barns. In general the buildings are fairly good and well kept.

Stock.—Their stock is fairly good. They have good horses, cows and other animals, and as a rule they take good care of them.

Farm Implements.—They are fairly supplied with farm implements and they understand well how to use them.

Education.—There is a good school on the reserve, kept by the Sisters of the Holy Rosary. The children who attend regularly are making good progress, but some parents are rather lukewarm regarding the education of their children.

Religion.—These Indians are all Roman Catholics. The Capuchin Fathers always take great care of their religious welfare.

Characteristics and Progress.—These Indians are industrious and good workers and they all make an effort to earn their living honourably; but some of them are still improvident.

Temperance and Morality.—A good many of these Indians are addicted to the use of intoxicants; the vicinity of the town of Campbellton, where they can procure the same so easily, is the cause of this to a great extent.

The morality of these Indians is fairly good.

I have, &c.,

J. PITRE,
Indian Agent.

PROVINCE OF QUEBEC,
MONTAGNAIS OF LAKE ST. JOHN,
POINTE BLEUE, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report accompanied by statistical statement for the year ended March 31, 1908.

Tribe.—The Indians of this reserve are all Montagnais; there are among them some Abenakis and Algonquins, but a long time ago the latter Indians were adopted by the great Montagnais family, whose uses and customs they have adopted and whose language they have learned.

Reserve.—The reserve is situated on the northwest bank of Lake St. John, in the county of Chicoutimi, in the province of Quebec, 5 miles from the town of Roberval. It has an area of 22,423 acres—the whole of Ouiatchouan township—19,525 acres of which has been surrendered by the band and sold for its benefit. This part of the reserve kept for the Indians is magnificently situated. From the top of the high land to some feet from the bank the view takes in the whole extent of Lake St. John, around which arise everywhere flourishing parishes. The soil is of the first quality and the climate suitable for all kinds of cultivation, including wheat and vegetables. This reserve by its situation and by the agricultural value of its soil, has been for a long time coveted by the white men residing around it, who are always longing for the time when they will be permitted to work it for themselves.

Population.—The population of the band is 572.

Health and Sanitation.—From a physical standpoint the Montagnais are generally robust and of strong constitution. No epidemic disease has appeared in the band, and the health has been good. The physician for the reserve, Dr. J. Constantin, of Roberval, in the course of his numerous visits, always makes it a point to direct the Indians as to sanitary precautions to take to avoid disease. His advice is generally well followed and there is no doubt that it is thanks to his persevering efforts that I am able to report such a good sanitary condition. The houses are kept clean, with very rare exceptions.

Occupations.—These Indians are making satisfactory progress in farming. The cultivable land is nearly always all sown. The Indian farmers of this reserve have given up the old custom of asking for seed-grain from the department; their harvest is always sufficient now to enable them to keep all the seed-grain necessary for seeding. Several have improved their farms by putting up wire fences. However, most of the

Indians live by the hunt, which has been fairly abundant this year, with very remunerative prices for furs. Hares and partridge were extremely scarce last winter, and as these are a great item in the food-supply of our hunters, several of them suffered and in some cases seriously. Other Indians work in the shanties and drive the logs, in which work they excel. Still others act as guides to sportsmen or conduct prospectors and miners in the far regions of the north. The old people of the band engage in the making of canoes, while the squaws make snow-shoes and moccasins. From these several kinds of work the Indians derive a very satisfactory income.

Buildings.—The houses, as well as all the other buildings belonging to the Indians, are well maintained; improvements to them are made every year. The houses of the Indians, like their tents, are sufficiently ventilated to give them all the fresh air they require.

Stock.—The stock of the band can be compared with advantage with that of the surrounding white people, and the owners appear to take all the care of them required.

Farm Implements.—The Indian farmers are provided with modern farm machinery suitable for the working of their farms, and they all know how to make use of it.

Education.—The school-house is situated in the centre of the reserve, about five arpents from the church. By its position and its dimensions this school is amply sufficient to satisfy the needs of the school population of this reserve, without its being necessary to think of establishing another school for several years. It is under the charge of Miss Berthe Potvin, who holds a model school diploma. This teacher is devoted and conscientious in the performance of her duties, and the pupils are obedient, studious and attentive. The teaching is given in French, with a little English. The school-house is well lighted, well ventilated, and provided with modern furniture. The children have made marked progress in their studies; but, with the exception of too small a number, it is very difficult to make them follow the regular courses. The average attendance is, however, satisfactory, taking into consideration the fact that many of the children accompany their parents on the hunt.

Characteristics and Progress.—Several of our Indians are active, industrious, hard-working, and even economical. The indolent and the improvident are now a small number. The Montagnais are endowed with quick intelligence and are capable of rapid progress. It gives me pleasure to observe that no money has been paid in the name of the department during the course of the year as assistance to the indigent or to the sick, which shows that our Montagnais are sufficient in themselves and know how, when occasion requires, to assist each other. A certain number of Indian farmers, under the leadership of Councillor David Philippe, have made a road along the division line of ranges B and C, reaching half the length of the reserve, in order to be able to reach more advantageously the lands situated in each of these ranges. They undertook the opening of this road, which is of very great use, of their own initiative. All the Indians interested worked with pleasure in the making of this road, with the exception of two or three generally known as lazy men, who had to be poked up before doing their share of the work. The Indians of this reserve are certainly not retrograding, they are rather making real progress in several respects.

Temperance and Morality.—Morality is well observed. I wish I were able to say as much of temperance, but, unfortunately, it is impossible for me to do so. Nearly all our Indians give way to drunkenness when the opportunity presents itself. This vice alone, if a check were not put to it, would soon annihilate the whole band. There are some exceptions, but they are rare. However, thanks to the exhortations and advice of their clergy, there is an improvement in their conduct on the reserve in the matter of sobriety. Last summer nearly all of them became members of the temperance society, but the good resolutions formed at the foot of the altar did not last even as long as the flowers. They have also so much opportunity of procuring liquor outside of the reserve, through the intermediary of vagabonds having very little scruple for the law. When they can place their hands on a bottle of whisky, the

Indians never lack the means of becoming drunk, to fight and to have black eyes. The greatest disturbances due to intemperance during the course of the year took place outside of the reserve, 18 or 20 miles from the agent's office. Rigorous measures are the best to adopt to arrest this sad evil, and the steps taken last summer by the department to stamp it out here, where it is so deeply rooted, will produce, I hope, excellent results.

I have, &c.,
ALPHONSE MARCOUX,
Indian Agent.

PROVINCE OF QUEBEC,
MONTAGNAIS OF LOWER ST. LAWRENCE—BERSIMIS AGENCY,
BERSIMIS, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908, on my agency of the Lower St. Lawrence, which comprises the bands residing at Escoumains and Bersimis.

ESCOUMAINS BAND.

Reserve.—The reserve of this band is situated on the southwest shore of the Escoumains river, on the north shore of the St. Lawrence, Saguenay county, and has an area of 97 acres. The land is not all suitable for cultivation.

Tribe.—All the Indians of this band are Montagnais.

Population.—The population is the same as last year, namely, 42.

Health and Sanitation.—The health of the Indians has been good during the year as a rule; there has been no contagious disease. These Indians have suitable and comfortable houses.

Occupations.—The occupations of these Indians vary; but the chief occupation in winter consists in hunting fur-bearing animals and seals; some go to work in the shanties; they also act as guides to sportsmen, and engage in fishing.

Education.—As there is no school on this reserve, the children attend the white school at the village of Escoumains. They are all very well satisfied with this school, and the children who attend all speak French, and many others also.

Progress.—There is progress in the case of the children who attend school; as for the old people, I cannot say as much.

Religion.—All the Indians of this band are Roman Catholics. They attend the church of the parish of Escoumains.

Temperance and Morality.—The Indians of this band are all temperate and very moral.

BERSIMIS BAND.

Reserve.—The reserve of this band is situated on the east bank of the Bersimis river, on the north shore of the St. Lawrence, in Saguenay county. The area is 63,100 acres.

Tribe.—The Indians of this band are all Montagnais.

Population.—The population of this band is 513.

Health and Sanitation.—The health of these Indians has not been as good this year as usual. Consumption makes the greatest ravages among them; it is impossible to make them keep their houses in a proper condition except in a few cases.

Occupations.—The sole occupation of this band is hunting fur-bearing animals in winter; and as these Indians come down with the timber at the end of June, they rest themselves by salmon-fishing and in acting as guides to sportsmen, playing cards and dancing. Last summer the salmon-fishing was a complete failure. These Indians go off to the woods at the end of August and September. Several spend the winter on the reserve, but the majority go hunting. Sometimes they are employed as guides by explorers.

Education.—There is a fairly good school on the reserve. The children that attend are making fair progress.

Progress.—I do not observe any progress in this band.

Temperance and Morality.—These Indians are much addicted to liquor, and not one of them will divulge where he purchases it; it is very difficult to prevent this traffic without having police all the time. The morality of the Indians is neither very good nor very bad.

This winter a poor Indian discharged his gun into his hand. He had to have it amputated by a surgeon. This was a misfortune, for he was the best worker in the band.

I have, &c.,

A. GAGNON,
Indian Agent.

PROVINCE OF QUEBEC,
MONTAGNAIS OF LOWER ST. LAWRENCE—MINGAN AGENCY,
ESQUIMAUX POINT, June 12, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report on the affairs of this agency for the financial year ended March 31, 1908.

Reserve.—There is only one reserve in this agency, viz.: Seven Islands.

Population.—The population of the reserve is 360; and the whole agency, 1,032.

Health and Sanitation.—The health of this band as well as all the Indians in the agency has been fairly good throughout. No epidemic prevailed this year as in former years.

Buildings.—The majority of the Indians at Seven Islands and Mingan live in comfortable houses. The Natashquan, Romaine and St. Augustine Indians live under tents.

Occupations.—The only occupation of the Indians in this agency is fur and game hunting. Apart from Romaine, where fur hunting was a total failure, it was very fair and prices obtained for pelts were high.

Morality and Temperance.—The morals of these Indians are good; but unfortunately some of them are addicted to liquor.

I beg to add that the only way to stop the selling of liquor to the Indians in this agency will be to appoint a constable at Seven Islands and one at Mingan.

I have, &c.,

J. E. TREMBLAY,
Indian Agent.

PROVINCE OF QUEBEC,
TIMISKAMING AGENCY,
NORTH TIMISKAMING, June 16, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

TIMISKAMING BAND.

Tribe or Nation.—The Indians of this band are Algonquins, with a large percentage of Scotch blood in them.

Reserve.—The Timiskaming reserve is situated in the county of Pontiac, province of Quebec, at the head of Lake Timiskaming, on the north side of the Ottawa river, commonly called the Quinze. It formerly comprised an area of 38,400 acres, but 23,464 acres have been surrendered, leaving 14,936 acres for the band; of the above quantity the Indians have located 3,879 acres.

Population.—There has been an increase of 8 during the year, the number now being 238.

Health and Sanitation.—The health of the band during the past year has been very good, less sickness and fewer deaths than any year for a considerable time past.

Occupations.—The majority of the band are engaged in farming on a small scale, but none depend altogether upon farming for a livelihood; quite a number work in the woods during the winter taking out pulp-wood, a few do some trapping and hunting, but the number is continually becoming less owing to the scarcity of fur-bearing animals in this section and also to the fact that they receive better remuneration for their labour in other occupations. Quite a number act as guides to tourists and sportsmen during the latter part of the summer.

Buildings.—There have been a few new buildings erected, and some improvements made to the old ones.

Stock.—There has been a slight increase in the number of horses owned by members of the band, but very few families own more than one milch cow, and the larger number none at all.

Farm Implements.—The band is tolerably well supplied with farm implements, quite sufficient for their needs.

Education.—There is one school on the reserve, presided over by Sister Mary Aimée of the Society of Good Shepherds. The majority of the children do not attend school very regularly; therefore their knowledge in reading, writing and figures is not acquired very rapidly, but a few that do attend regularly make good progress, but none continue long enough at school to get a good education.

Progress.—There are a few families that are making very good progress, while a few others are simply living without making any advancement whatever.

Religion.—All the members of this band are Roman Catholics and nearly all are very attentive to their religious duties.

Temperance and Morality.—The majority of the band are very temperate in their habits, a few do indulge a little occasionally in liquor when they can get it. There have been a few cases of immorality amongst members of the band; but, taken as a whole, they compare very favourably with the whites.

I have, &c.,
ADAM BURWASH,
Indian Agent.

New Brunswick,
Northern and Southwestern Divisions,
Fredericton, April 23, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report and statistical statement for the year ended March 31, 1908.

NORTHERN DIVISION—EDMUNDSTON BAND.

Reserve.—This reserve is situated in the county of Madawaska. It consists of 720 acres, of which 518 are forest-lands, the remaining being farming and pasture lands.

Population.—The population of this band is 50.

Health and Sanitation.—The health of the band has been extra good. The cleansing of dwellings and premises is carefully looked after, and the band was free from diseases of a contagious nature during the year.

Occupations.—The occupations of the band consist of milling, acting as guides, working in the lumber woods, river-driving, making Indian wares and farming. The principal crops raised are potatoes, oats, buckwheat and hay. Considerable farming was done by the band. The crops in early summer looked very promising, but owing to the usual wet and cold season, the yield from seeding and planting was not at all up to expectation.

Buildings.—Their dwellings are all frame buildings and of modern style and finish, and are very comfortable.

Stock.—The members of this band are owners of only a few horses and cattle. The few they own have been well cared for during the past winter.

Farm Implements.—A few ploughs, hand-rakes and hoes are the only farm implements owned by the band.

Education.—Owing to the interest manifested in educational affairs by the parents, quite a number of children of the reserve attend the convent and free school of the town.

Temperance and Morality.—The use of intoxicants amongst these Indians has been for the past year of rare occurrence. They are peaceful, highly respected by their white neighbours, and their morals in every respect are most satisfactory.

TOBIQUE BAND.

Reserve.—This reserve is situated at the junction of the Tobique and St. John rivers. It consists of about 14,800 acres of forest and farming lands. The lands below the Tobique river are covered with a fine growth of timber and fire-wood; whilst some 5,000 acres of land above the Tobique river are also covered with a fine forest of timber, and is the very best of farming lands.

Population.—The population of this band is 198.

Health and Sanitation.—The health of this band has been fairly good for the past year. Quite a few adults, however, were afflicted with consumption, which in several cases has proved fatal. The sanitary regulations prescribed by the department were strictly attended to last spring by removing old shacks, the whitewashing

of dwellings, both inside and out, and the removing of all garbage that was considered offensive and dangerous to health. Happily there was no contagious disease amongst the band during the past year.

Occupations.—The occupations of these Indians consist of hunting, acting as guides, working in the lumber woods, stream-driving, rafting lumber, running rafts to Fredericton, labouring work for residents of Perth and Andover, Indian wares and farming. Last spring considerable labour was devoted to farming by these Indians in planting their lands. Their crops at first looked as if they were going to have an abundant yield, but owing to the unusual wet season and a heavy fall frost, all the crops fell short of even a fair average. During the past winter a large business was done in the manufacture of Indian wares, especially snow-shoes, axe handles, baskets and barrel-staves, which are readily sold at good prices.

Temperance and Morality.—A few of the young people occasionally will indulge in the use of intoxicants, but as a rule the great majority of the band are strictly temperate. Their morals, I am pleased to state, are very good.

Education.—There is a day school on the reserve. The teacher, Miss A. A. Bradley, holds a second-class provincial license. Owing to the united interest manifested by the teacher and parents in educational affairs, the attendance for the past year and progress of the pupils were very satisfactory.

Characteristics.—The Indians of this reserve are an industrious, peaceful and law-abiding people. They are good workers and their services at all seasons of the year are in good demand at good wages, but although they are comfortable in their present state, they do not seem to make any effort to provide for their families for a future day; hence in sickness or accidents, the department must provide for their wants.

SOUTHWESTERN DIVISION.

WOODSTOCK BAND.

Reserve.—This reserve is situated 3 miles below the town of Woodstock. It fronts on the St. John river and consists of 200 acres, including cleared and forest lands.

Population.—The population of the reserve, including the Indians residing at Upper Woodstock, is 66.

Health and Sanitation.—During the year the members of this band have enjoyed good health. They have been free from diseases of a contagious nature, and no deaths have occurred among them for the past year. Their dwellings are small frame erections; they are fairly comfortable, but in a few cases are overcrowded and therefore detrimental to health.

Occupations.—These Indians derive their living from the sale of Indian wares, working in the lumber woods, river and stream-driving, and working for farmers in the vicinity of the reserve. Farming, except the raising of small vegetables, is not engaged in by any of the band.

Temperance and Morality.—Their morals are good; and with one or two exceptions, they are not given to the use of intoxicants.

Education.—There is a free school about a mile distant from the reserve, at which the Indian children are welcome to attend. None of them, however, will take advantage of it.

KINGSCLEAR BAND.

Reserve.—This reserve is situated in the parish of Kingsclear, York county, 11 miles distant from the city of Fredericton. It fronts on the St. John river and consists of 460 acres, of which 360 acres are forest-lands, the remainder being farming and pasture lands.

Population.—The population is 112.

Health and Sanitation.—The health of these Indians has been fairly good. No disease of a contagious nature appeared amongst them during the past year. Sanitary measures prescribed by the department were attended to in the month of May last.

Occupations.—The principal occupations of this band are the manufacture of all kinds of Indian wares. Many of these artieles are sold at Fredericton and to farmers in the vicinity of the reserve, whilst their fancy wares are held over to sell to tourists, who on their arrival are visited by the Indians at their summer resorts. Most of the young men work in the lumber woods in winter. In spring and freshet time they hire at stream-driving, and on their return they find ready employment at rafting lumber along the river opposite their reserve. Usually they get good wages for their labour, but it seems to go as fast as it is earned. Farming is not engaged in to the same extent as in former years, as most of the band spend the greater part of the season at the summer resorts disposing of their fancy wares, which they claim is more profitable and no doubt more pleasing to their trait of character than farming.

Stock.—They are owners of some good horses, and a few head of cattle. These have been well wintered, and are in good condition.

Buildings.—Their dwellings are all frame buildings, they are of modern style and finish, they are in good repair, and are kept neat and clean.

Education.—The day school on this reserve is under the supervision of Miss Mary C. Monaghen, a teacher holding a second-class provincial license. As a result of the interest taken by both parents and teacher in the education of the pupils, the attendance and progress made by all the children were very satisfactory.

Characteristics.—With but very rare exceptions, I am pleased to state the members of this band are not addicted to the use of intoxicants. Their morals are extra good. They are law-abiding, peaceable, and much respected by their neighbours.

ST. MARY'S BAND.

Reserve.—This reserve is situated directly opposite the city of Fredericton. It consists of 2 acres of land, and fronts on the St. John river.

Population.—The population of this reserve is 131.

Health and Sanitation.—The health of these Indians, notwithstanding that the reserve is overcrowded with buildings, has been fairly good. The dwellings are all one story frame buildings. Sanitary measures are strictly enforced on the approach of fine weather.

Occupations.—The principal occupation is the manufacturing of Indian wares. The young and able-bodied men engage in hunting, guiding, stream-driving, working in the lumber woods, and loading scows with deals, and other sawed lumber, which gives a large amount of employment at good wages. Farming, excepting the raising of a few vegetables, is not engaged in by the band.

Education.—The day school on this reserve is under the supervision of Miss M. I. Rush, a teacher holding a second-class provincial license. The attendance and progress of pupils for the past year have been good and satisfactory in every respect.

Temperance and Morality.—Probably owing to the close proximity of the reserve to the city of Fredericton, and its being in the centre of the St. Mary's and Gibson villages, where the temptations are many, I have to state that not less than half the band at certain times will indulge in the use of intoxicants. Their morals, however, are fairly good. Some of the band are industrious and good workers; others are not so inclined, and prefer an easy and idle life to any kind of employment.

OROMOCTO BAND.

Reserve.—This reserve is situated at Oromocto, 11 miles below the city of Fredericton. It fronts on the St. John river, and consists of 125 acres of forest and farming lands.

Population.—The population of this band is 73.

Health and Sanitation.—The health of these Indians for the past year was good. They were entirely free from contagious disease. Their buildings are of an inferior kind. The reserve is most favourably situated in the interest of health. It possesses one of the finest views on the St. John river.

Occupations.—Most of the band follow labouring work for a living. Farming, apart from the raising of some potatoes, is not engaged in. A few of the younger men find ready employment in winter in the lumber woods, others find employment with well-to-do farmers, and the residents of Oromocto village. In summer season the majority of these Indians remove to Upper Gagetown, where they camp, and work in a saw-mill at fair wages until river-closing. Owing to the scarcity of ash in this section, very little work is done at Indian wares.

Temperance and Morals.—Their habits and morals, I am pleased to state, have, during the past year, been very good.

Education.—None of the children of the band, largely due to the indifference of their parents, are inclined to attend the free school situated only a short distance from the reserve.

General Remarks.—The rest of the Indians of this agency are located at Upper and Lower Gagetown, in the county of Queens. In addition to the above, there is a large number of Nova Scotia and Prince Edward Island Indians of the Micmac tribe that are camped in villages in the counties of York, Charlotte, St. John and Kings. These Indians, for a living, engage in much the same employments as Indians of the western district of New Brunswick. Some of them are good workers and do fairly well. Others there are, however, who prefer an easy time to procure a living rather than hard labour; such are to be found amongst most bands of this supervision.

I have, &c.,
JAMES FARRELL,
Indian Agent.

NOVA SCOTIA,
MICMACS OF ANNAPOLIS COUNTY,
ANNAPOLIS, March 28, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the year ending March 31, 1908.

Reserve.—There are in connection with this agency two reserves, viz., the Liverpool Road reserve, situated on the Liverpool road, 8 miles from the town of Annapolis, and the Fairy Lake reserve, situated on the boundary line between Annapolis and Queens counties. The former contains 572 acres; the soil is unsuitable for agricultural purposes, but is fairly well covered by a good growth of soft and hardwood timber, and, if properly protected, would in time become valuable. The Fairy Lake reserve comprises 400 acres of good agricultural soil, but only a small portion of it cleared, which produces wild grapes; the rest is covered with a good growth of timber, which is increasing in value. The site is picturesque, and in time will become valuable. There are no Indians living on either reserve, nor do they derive any benefit from them.

Population.—The population of this agency is 69, an increase of 1 during the year.

Health and Sanitation.—The health of the Indians has been fairly good during the year. There have been 3 deaths from consumption and 4 births. Their dwellings are all frame buildings and are kept neat and clean. They willingly comply with sanitary regulations.

Resources and Occupations.—The majority of them make an effort to grow some farm products with satisfactory results; but their principal occupations are hunting, fishing, basket-making, acting as guides to sportsmen, chopping, stream-driving, &c.

Education.—The Indians living at Lequille send their children to the public school, the department paying for tuition. The teacher reports they make fair progress.

Characteristics and Progress.—Some are industrious and saving, but the majority try to get along with as little work as possible; they will not cultivate any faculty of saving or providing for future wants. When accidents or sickness occur, they need assistance, but are improving.

Temperance and Morality.—Under both these respects, their conduct is good.

Religion.—They are all Roman Catholics.

I have, &c.,

JOHN LACY,
Indian Agent.

NOVA SCOTIA,
MICMACS OF ANTIGONISH AND GUYSBOROUGH COUNTIES,
HEATHERTON, April 28, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report with statistical statement, for the year ended March 31, 1908.

Population.—The population of this agency is 216, being an increase of 1 over last year, there having been 6 births and 5 deaths during the year.

Health.—While there were no contagious diseases prevalent among them, the health of the Indians for the past year, has not been good.

Buildings.—There have been three new buildings erected during the past year and considerable repairs have been made. These Indians seem to be very thankful for the assistance rendered them by the department in this particular.

Temperance and Morality.—The Indians of this agency are a sober, honest and moral class of people; any deviation from this is rare indeed.

I have, &c.,

J. R. McDONALD,
Indian Agent.

Nova Scotia,
Micmacs of Cape Breton County—Eskasoni Agency,
Grand Narrows, C.B., April 18, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I beg to submit my first annual report on the affairs of the Indians on the Eskasoni reserve.

Tribe.—The Indians of Eskasoni belong to the Micmac tribe.

Reserve.—The reserve is situated in Cape Breton county and consists of about 2,800 acres. Most of the reserve is low and level and faces the Bras d'Or lake. The cleared land is fertile and suitable for agriculture. A large part of the reserve is covered with a forest of pine, spruce and fir, which yield good timber.

Population.—The population of the Eskasoni reserve is about 120.

Health and Sanitation.—Generally the Indians of this reserve have retained good health during the past year. Excepting a mild form of chicken-pox or scabies, the reserve has not been visited by any contagious disease. Of all diseases among the Indians of this reserve, tuberculosis seems to be the most prevalent. It has claimed two victims during the past year.

It is generally recognized that this race is predisposed to tuberculosis. This can be accounted for in a great measure by their manner of living. No precautions whatever seem to be taken to prevent the spread of this dread disease, and the wonder is that it is not more widespread.

Occupations.—Most of the Indians of this reserve devote a considerable part of their time to farming and timbering or lumbering. Fishing, hunting, trapping and basket-making are carried on by a few. Farming, however, is their principal occupation and generally yields a good return. The soil is rich and gives a good harvest. During the winter months they are all engaged in pit timbering, that is pit props for the coal mines. This pays well, as soft wood timber is plentiful on the reserve, and they receive a good price for it.

Buildings.—With few exceptions, the Indians of this reserve have all erected frame dwellings on their various lots, in place of their old-time wigwam. All who have stock of any kind have stables and barns in which to shelter them and store their fodder. During the past year three new dwelling-houses have been erected on this reserve.

Stock.—Nearly all the families of this reserve keep stock of some kind, generally a horse and a milch cow. Several families, however, raise sheep, which is a very profitable industry, as there is excellent pasturage on the reserve. Some of them keep young stock and beef cattle.

Farm Implements.—The Eskasoni Indians do not possess many farm implements, which are so necessary for the proper cultivation of the land. They have, however, on the reserve several mowers, harrows, ploughs, carts, trucks and sleds. A few of them also possess riding wagons.

Education.—There is a school-house situated about the centre of this reserve. A new school-house, however, is badly needed, as the present one is old, having been built about thirty-five years ago. School has been conducted here during the past term. At present there are eighteen pupils enrolled. As a rule the attendance is poor, the average daily attendance during the past quarter being only six. This can be accounted for in a measure by the fact that the parents do not take the interest in the school that they should. On the whole, good progress has been made during the past year.

Characteristics and Progress.—In general the Indians of this reserve are good, industrious people. They work diligently at their various avocations, and consequently are seldom in want.

Temperance and Morality.—The Eskasoni Indians are very temperate and are a good moral-living people.

I have, &c.,

A. J. McNEIL,
Indian Agent.

NOVA SCOTIA.

MICMACS OF CAPE BRETON COUNTY—SYDNEY AGENCY,
SYDNEY, May 28, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

SYDNEY BAND.

The Indians of the Sydney band own about 640 acres of reserve on the Caribou Marsh road about 5 miles from Sydney, though none of them live on that reserve. They all live on a small reserve, containing about 2¾ acres, beautifully located on the harbour of Sydney and within the limits of the city. They get their wood-supply from the Caribou Marsh reserve.

Tribe.—All the Indians of this band are Micmacs.

Population.—The population is 90, an increase of 13 since last year.

Health and Sanitation.—The general condition of health has been very good, no epidemics of any kind prevailing. The sanitary conditions on the Sydney reserve are excellent. The Indians pay much more attention to their houses and surroundings than heretofore, and their personal habits as regards cleanliness are very much improved.

Occupations.—Both men and women are industrious, and, when work is to be obtained around town, they do well. Labour, however (of the character such as they are able to perform), was very scarce for the past year, and consequently they have not been so prosperous as in years when labour was easily obtained.

Buildings.—They all live in houses, and, although these are not of very great dimensions, yet they are quite comfortable, with separate bed-rooms and some furniture.

Education.—They have a good school in charge of a very capable and energetic teacher, and the children who attend regularly are making good progress. It is difficult, however, for either myself or the teacher to impress upon some of the parents the importance of sending their children to school regularly.

Religion.—They are all Roman Catholics.

Temperance and Morality.—The past year has been a banner one for temperance and morality among these Indians. They all took the temperance pledge about a year ago, and I believe, so far, have kept it, and while they keep away from strong drink they are all good citizens in the strictest sense of the word.

NORTH SYDNEY BAND.

Reserve.—This band is located about a mile and a half from the town of North Sydney. They are squatters who come and go periodically.

Buildings.—Their houses are but shanties, and some of the Indians live even in camps.

Tribe.—These are also all Micmacs.

Population.—The population is 48. Last year there was a population of 67.

Health and Sanitation.—The health of these Indians, as a rule, is poor, many of them suffering from rheumatism and from a low state of vitality consequent upon their mode of living.

Occupations.—Being of the roaming class, they are not very industrious. They live principally by getting little jobs about town and by coopering and basket-making.

Religion.—They are all Roman Catholics.

I have, &c.,

D. K. McINTYRE,
Indian Agent.

NOVA SCOTIA,
MICMACS OF COLCHESTER COUNTY,
TRURO, April 15, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Reserve.—Millbrook reserve is located 3 miles south of Truro, and contains an area of 35 acres, with a wood lot of 80 acres. A few Indians live near the town of Stewiacke.

Population.—The total number of Indians on this reserve is 104.

Health and Sanitation.—The health of the Indians has been fair during the past year; two have died from consumption, and there are some chronic sufferers from the same disease at present. The sanitary regulations are well observed.

Occupations.—The Indians of this reserve are employed in lumbering, stream-driving, hunting in winter, and in summer as labourers on the Intercolonial railway, in the town of Truro, and on the neighbouring farms. They also make baskets, hockey-sticks, rustic chairs, and do a little coopering.

Education.—As they have had the advantage of a school for some years, all the young Indians can read and write. It is difficult in summer to get them to attend regularly.

Religion and Morals.—The Indians are all Roman Catholics; and with the exception of a few, their morals are good.

Progress.—The Indians are industrious and law-abiding, and those who work steadily are gradually getting into better circumstances.

Superintendent Boyd, during his inspection, remarked that the condition of these Indians, in comparison with other reserves, impressed him favourably.

I have, &c.,

ROBERT H. SMITH,
Indian Agent.

NOVA SCOTIA,
MICMACS OF CUMBERLAND COUNTY,
PARRSBORO', May 11, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR.—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Tribe.—All the Indians in this county belong to the Micmac tribe.

Reserve.—Franklin Manor, the only reserve in this agency, is situated at Halfway river, about 14 miles from Parrsboro', and 35 or 40 miles from the town of Amherst. It consists of 1,000 acres of good land. More than half of all the Indians belonging to this county reside on, or near, this reserve. The remainder are scattered more or less over the county, a few living at each of the following places: Southampton, Springhill Junction, River Hebert and Amherst.

Population.—The total number of Indians in this county is 102, consisting of 22 men, 21 women and 59 children and young people under twenty-one years of age. There were 6 births and 3 deaths during the year, making an increase of 3, as compared with last year.

Occupations.—A few of these Indians farm in a small way, but do not succeed in raising very large crops. In winter the lumbermen in the vicinity give employment at good wages to all who are willing to work. Some of the Indians in preference to farming or lumbering make baskets, tubs, axe and pick handles, mast-hoops, &c. Some are hunters, others are guides for hunting parties, and in this way make a fairly good living. In summer and autumn the women and children pick and sell May flowers and berries.

Health and Sanitation.—The health of the Indians, generally speaking, has been good. No epidemic of any kind has affected them, and the death-rate has been low. So far as I know, there are at the present time no cases of tuberculosis. The sanitary precautions recommended by the department were carefully carried out, and the houses, both inside and out, are for the most part fairly clean. Nearly all, if not all, these Indians have been vaccinated.

Religion.—All these Indians are Roman Catholics. They have a chapel of their own.

Education.—A few of the children attend school at Halfway River, the department paying for their tuition. Many of the parents do not seem to care whether their children attend school or not; but, in spite of this indifference, many of the young Indians can read and write.

Characteristics and Progress.—Some of these Indians are industrious, but others, I am sorry to say, would rather do anything than work. All are law-abiding. Most of them seem satisfied with merely getting a living, very few have laid anything by for a rainy day.

Temperance and Morality.—A great improvement has taken place during the past few years in regard to both temperance and morality. At the present time very few drink at all, and all of them, I believe, lead moral lives.

I have, &c.,

F. A. RAND,
Indian Agent.

Nova Scotia,
Micmacs of Digby County,
Bear River, March 31, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report and tabular statement for the year ended March 31, 1908.

Reserve.—The reserve is located 1½ miles from the village of Bear River, and contains 1,600 acres, of which 48 is cultivated, 200 natural pasture-land; the remainder is forest, mostly second growth, chiefly hardwood.

Population.—The population is 107; 20 live in Weymouth, the remainder on the reserve.

Health and Sanitation.—The health of the Indians has been fairly good. Quite a number have had the grippe; several have pulmonary disease. Sanitary measures have been carried out as far as possible. There has not been any contagious disease during the year.

Occupations.—These Indians act as guides for the sportsmen, engage in hunting and river-driving, and make fancy-work of different kinds.

Buildings.—The buildings are mostly frame; they are in good repair, clean and comfortable.

Education.—There is a well equipped school on the reserve, with an excellent teacher in charge. The attendance is good, and the children are making good progress.

Religion.—They are all Roman Catholics.

Characteristics and Progress.—Some of them are industrious, but quite a number try to get along with as little work as possible. Sickness and accidents find them without any reserve to draw upon; then they need assistance.

Temperance and Morality.—The morals of the Indians are good; and with very few exceptions they are temperate.

I have, &c.,
JAMES H. PURDY,
Indian Agent.

Nova Scotia,
Micmacs of Halifax County,
Sheet Harbour, April 27, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Reserves.—There are six reserves in this agency, comprising about 2,269 acres, no Indians residing on these reserves.

Population.—The population now is 252, residing at different points, viz.: Bedford, Dartmouth, Elmsdale, Enfield, Fall River, Sheet Harbour and Wellington.

Health and Sanitation.—During the past year there has been a great deal of sickness. A mild form of small-pox, or Cuban itch, has been prevalent at some points. The very changeable winter had a bad effect on general health. Sanitary measures are well observed.

Occupations.—Farming, fishing, lumbering, acting as guides to sportsmen, and manufacturing hockey sticks are the chief sources of revenue.

Religion.—All are Roman Catholics.

Education.—Very few attend school, and it is difficult to educate them into the importance and benefit derived from it.

Buildings.—The buildings are mostly frame and are in good repair. The many rovers in summer adhere strictly to the round camp.

Characteristics.—They are a law-abiding band and quite a few are becoming from year to year more industrious, and do not require much assistance; others are very poor.

Temperance and Morality.—With few exceptions they are all quite temperate, and their moral character good.

I have, &c.,
DANIEL CHISHOLM,
Indian Agent.

NOVA SCOTIA,
MICMACS OF HANTS COUNTY,
SHUBENACADIE, May 2, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report, together with agricultural statistics of the band under my care.

Tribe or Nation.—The band in this county is part of the Micmac tribe, which formerly occupied Nova Scotia and part of New Brunswick.

Population.—The population is 100.

Health and Sanitation.—The health of the band during the year has been good. No epidemic diseases have been in the band, and only a few deaths have resulted from any cause except consumption, and this disease is being combated by Dr. McLean with all available means. This appears to be the one disease dreaded by the band. All possible precautions have been taken, such as sanitation and personal care of patients suffering from it.

Occupations.—The band engage in such work as farming, fishing, coopering, basket-making, working in lumber camps and saw-mills.

Buildings.—Their buildings are comfortable.

Stock.—The stock has wintered well.

Farm Implements.—The implements they have, although not up to date in many cases, are sufficient for their use.

Education.—Education is at a standstill, the school being closed on account of lack of interest.

Characteristics and Progress.—The Indian is a law-abiding person, with few, if any, offences against society or morality, and may be said yearly to be becoming more like the community in which he lives and trades.

Temperance.—No cases of intemperance have been reported during the year.

I have, &c.,
ALONZO WALLACE,
Indian Agent.

NOVA SCOTIA,
MICMACS OF INVERNESS COUNTY,
GLENDALE, April 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and tabular statement for the fiscal year ended March 31, 1908.

Reserves.—There are two reserves in this agency: Whycocomagh, 1,555 acres; Malagawatch, 1,200.

Vital Statistics.—The Whycocomagh band numbers 127, while there are in the Malagawatch band 44.

Health and Sanitation.—There was no outbreak of any contagious disease during the year. Consumption carries one or more away each year. There are two victims beyond hope at Whycocomagh now. I notice that some precautions are taken to prevent infection, as, for instance, the use of receptacles containing wood ashes for sputum. It ought to prove beneficial if the medical attendants gave the people little talks on sanitation. The agents could read to the Indians the pamphlets of the Anti-Tuberculosis League.

Education.—Indians, at least in this agency, do not seem to appreciate what is apparently being done for them in this line. The attendance is meagre, in fact ridiculously small.

Occupations.—A few depend on farming. The others beg, make axe-handles, sell cord-wood, pit props, butter-tubs and wash-tubs, baskets, moccasins and other nicknacks.

Temperance.—The two bands of this agency are very abstemious in the use of intoxicants. A great many are total-abstainers, and nearly all are temperate.

I have, &c.,
DONALD MACPHERSON, P.P.,
Indian Agent.

NOVA SCOTIA,
MICMACS OF KINGS COUNTY,
STEAM MILLS, April 27, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit my annual report and statistical statement for the year ended March 31, 1908.

Tribe.—All the Indians in this agency are Micmacs.

Reserves.—There are two reserves, one consisting of 9 acres, at Cambridge; the other, consisting of 420 acres, lying at Horton, Kings county, lately acquired, the reserve at Horton is mostly wooded; the reserve at Cambridge is a sandy plain.

Population.—The population of this agency is 76.

Health and Sanitation.—The health of the Indians has been good; there are no infectious diseases amongst them, owing to instructions given by the department

from time to time in regard to care of person and premises. That dread disease consumption seems to be about stamped out, as there is not a case of it amongst the Indians at the present time in the county.

Occupations.—The chief occupations of these Indians are basket-making, coopering, as labourers, stream-drivers, guides, &c.

Buildings.—Their buildings are comfortable.

Stock.—Their stock appears to be in good condition.

Farm Implements.—There are but few of these in this agency.

Education.—The Indian children attend school with the white children in whatever school section they are situated. Most of them can read and write.

Characteristics and Progress.—These Indians are fairly industrious, temperate and law-abiding, and seem to be making a more comfortable living than formerly.

Temperance and Morality.—They are on the whole temperate in regard to strong drink, and their morals are good.

I have, &c.,
C. E. BECKWITH,
Indian Agent.

NOVA SCOTIA,
MICMACS OF PICTOU COUNTY,
NEW GLASGOW, June 3, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Reserve.—There are two reserves, Fisher's Grant reserve has an area of 200 acres. The other reserve is a small island near the settlement of Merigonish.

Population.—The present population is 172, being an increase of 2 since last year. There were 7 births during the year.

Health and Sanitation.—There has not been any epidemic disease. There has been one death from consumption, and one from pneumonia. Three infants died. These Indians understand how tuberculosis is communicated, and are more careful, their houses and yards are kept clean. Their dwellings are not as large as desirable. Several sick persons were sent for treatment to Aberdeen hospital, New Glasgow, where it was well-nigh impossible to do anything for them at home. Complete recoveries were made, except in one case, which is still under treatment. The humane generosity of the department in securing for these persons first-class medical treatment and nursing must make a profound impression.

Occupations.—The avocations of these Indians are farming, fishing, coopering, making baskets, pick-handles, and from time to time hiring out as labourers.

Stock.—They have several horses at Fisher's Grant reserve. They keep no cows or swine.

Farm Implements.—They have a few ploughs and harrows, one cultivator and two carts.

Education.—There is a good school at Fisher's Grant reserve. A very competent teacher is employed. The attendance is fair and good progress is made.

Characteristics and Progress.—They are peaceful and law-abiding, scrupulously honest, and show great kindness towards the sick and destitute among them.

Temperance and Morality.—The Indians, with very few exceptions, are strictly temperate and profoundly religious.

I have, &c.,
J. D. McLEOD,
Indian Agent.

Nova Scotia,
Micmacs of Queens and Lunenburg Counties,
Caledonia, June 14, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Reserves.—There are three reserves in this agency of 1,000 acres each, two in Lunenburg county and one in Queens county. The Indians residing on the reserves make their living mostly by farming. Those not residing on the reserves make their living by fishing, hunting, basket-making and working in the lumber woods.

Population.—The population of this agency is 169, an increase of 2.

Health and Sanitation.—The health of the Indians in this agency for the past year has been fairly good. They observe sanitary regulations about their dwellings fairly well.

Education.—There is only one school in this agency, at New Germany, which, owing to the sickness of the teacher, has been closed part of the time. I am in hopes of getting a teacher to open the school at the beginning of the next term.

Religion.—All the Indians of this agency are Roman Catholics.

Characteristics.—The Indians of this agency are industrious and law-abiding.

I have, &c.,
CHARLES HARLOW,
Indian Agent.

Nova Scotia,
Micmacs of Richmond County,
Bailey's Brook, March 31, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Reserve.—Chapel Island reserve is situated on the shore of Bras d'Or lake, in Richmond county, and contains 1,200 acres of good soil.

Population.—The population of the reserve is 113, of which 33 are men, 33 women, and 47 children. The increase is due to 2 births and a migration of 17.

Health and Sanitation.—The health of the Indians, during the past year, has been remarkably good, there being no deaths and a physician's aid very seldom needed.

Occupations.—Throughout the year, the Indians are engaged in fishing, farming, hunting and lumbering, and when time permits, hire out as labourers. Spare minutes at home are spent in making baskets, axe-handles and tubs.

Buildings.—The buildings are kept in repair, and those erected during the past year are strongly built. The foundations of the shanties consist of a framework of

logs upon which the shanties are placed, the coverings of which in most cases are tar-paper.

Stock.—Horses and cattle are kept in excellent condition. There is an increase in both during the past year, also in poultry.

Farm Implements.—These are kept in fair condition and consist of a few ploughs and harrows. Hand implements are very much used in clearing land and working and cultivating the soil.

Education.—The school-house is situated about the centre of the reserve. Some parents are interested in the educational progress of their children, while others are indifferent. The children attending school regularly are much interested in their work, and the progress is satisfactory.

Religion.—The Indians are Roman Catholics, and faithfully perform the duties of their religion.

Characteristics and Progress.—Ambition is creeping into Indian life in general. Even those who seek aid from the government show signs of daily endeavouring to do what lies in their power to sustain themselves; and it is only when necessity demands that one of this band asks assistance. It can truly be said that these people are hard and busy workers. They observe the law and adopt more or less the habits of the white people.

Temperance and Morality.—The Micmacs are strictly temperate and moral in their habits. They live peaceably together and are most submissive to their chief and pastor.

I have, &c.,
JOHN FRASER,
Indian Agent.

NOVA SCOTIA,
MICMACS OF SHELBURNE COUNTY,
SHELBURNE, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Reserve.—There being no reserve in this agency, the Indians are located at Shelburne River, Sable River, Clyde River and Banington.

Population.—The population of this agency is 43.

Health and Sanitation.—The health of the Indians in general has been fairly good, although a few were sick with measles during the winter.

Occupations.—The principal pursuits are fishing, hunting and hiring out as labourers.

Buildings.—The buildings in this agency are of logs and frame, and are kept in good repair.

Education.—Few of the children attend school, as they reside quite a distance from the school-house. The parents take little interest in the education of their children.

Characteristics and Progress.—The Indians on the whole are industrious, law-abiding, and year after year they are improving in their habits. Some are quite independent; others are very poor.

Temperance and Morality.—They are all of temperate habits and their moral character is good.

I have, &c.,

JOHN HIPSON,

Indian Agent.

NOVA SCOTIA,

MICMACS OF VICTORIA COUNTY,

BADDECK, May 4, 1908.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Tribe.—All the Indians of this agency belong to the Micmac tribe.

Reserve.—There is only one reserve in this county, situated at Middle River, about one mile west of the village of Nyanza. It comprises 650 acres, 60 of which are in a fair state of cultivation, 200 acres cleared but not under cultivation, and the remainder covered with a second growth of light timber. The soil generally is fertile, being especially adapted for raising hay.

Population.—The population of this agency is 98.

Health and Sanitation.—The health of the Indians on this reserve for the past year has been good. They observe sanitary regulations about their premises fairly well. During the past year their buildings have been whitewashed with lime.

Occupations.—The principal pursuits are fishing, farming, hunting and hiring out as labourers.

Buildings.—The buildings are of frame, and are kept in good repair.

Stock.—Their stock is well housed and fed in winter. In summer the pasturage is excellent.

Farm Implements.—There are very few farm implements on the reserve, but the few they have are modern and well cared for.

Education.—There is one school, situated about the centre of the settled part of the reserve. The parents seem to take quite an interest in the school, and are anxious that their children should receive a common school education. The progress of the pupils for the past year was fair.

Characteristics and Progress.—They are an industrious and law-abiding class of people. Their condition is improving from year to year.

Temperance and Morality.—They are temperate and moral in their habits.

Religion.—The Indians in this agency are all Roman Catholics.

I have, &c.,

A. J. MACDONALD,

Indian Agent.

NOVA SCOTIA,
MICMACS OF YARMOUTH COUNTY,
YARMOUTH, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the fiscal year ended March 31, 1908.

Reserve.—There is one reserve in this county, situated on the north side of Starr's road, about two miles from town. It contains 21¼ acres.

There are two families living on the reserve. The rest of the Indians are scattered all over the county, some at Salmon River, Tusket, Tusket Forks, Hectanooga and Pubnico Head.

Vital Statistics.—The population of this agency is 80, 2 having moved away, and there having been 2 births.

Health and Sanitation.—The health of the Indians is poor. They observe the sanitary regulations with regard to their dwellings fairly well.

Occupations.—The Indians are engaged in saw-mills, log-driving, making baskets, axe-handles and mast-hoops. Some go as guides for hunting and fishing parties. Some do general work.

Education.—The children attend school fairly well when they have a chance.

Religion.—These Indians are all Roman Catholics.

Characteristics and Progress.—The winter was mild, but for sickness they would have got on fairly well.

Temperance and Morality.—With few exceptions they are temperate and law-abiding.

I have, &c.,
W. H. WHALEN,
Indian Agent.

NOVA SCOTIA,
INDIAN SUPERINTENDENT'S OFFICE,
RIVER BOURGEOIS, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR.—I have the honour to submit the following report relative to Indian affairs in the maritime provinces— Nova Scotia, Prince Edward Island and New Brunswick—for the year just closed.

Since my appointment as Indian Superintendent on May 14, 1907, my work has been confined chiefly to investigating particular cases affecting the interests and welfare of different bands under my supervision, and reporting the results to the department. The performance of that duty has given me an experience which enables me to form a pretty correct idea of general conditions prevailing among the Indians of these provinces.

With regard to the various occupations which they follow and the means at their disposal for making a livelihood, I do not feel called upon to say anything special, because these matters are always referred to more or less in detail by the different officials in charge of the several local Indian agencies; and for the same reason I do not think there is any necessity for referring to statistical statements or to particular circumstances characteristic of the various localities.

Grievances.—One circumstance to which I wish to direct particular attention is a subject of serious complaint among the Indians in some sections. I have reference to alleged trespasses on Indian lands, in some cases by actual encroachments and in others by illegal and unwarranted appropriations of the wood products of these lands, both of which, I think, are entitled to careful consideration; because several bands begin to clamour for new wood lands, at present not easily obtainable, in order to procure raw materials, which they contend, are getting very scarce, for manufacturing various wares that comprise the chief stock in trade of our Indians generally, and represent an important part of their earnings. Now it must not be inferred that agents are remiss in the discharge of their duties by not protecting reserves from trespassers, for on account of contentions between white people and Indians as to metes and bounds, agents hardly feel justified in taking such action as may determine the dispute and meet the ends of justice. But I believe that in some cases the grievance is well founded, and am persuaded that the easiest and best way to discover the facts is to have reserves whose boundaries are in doubt, located anew by actual survey. This I shall urge upon the department in due season. A peculiar form of trespass is causing considerable dissatisfaction among the Indians of some bands: intermarriage between white people and Indians occasionally occurs in the western part of Nova Scotia and it invariably happens that, when a white man marries an Indian woman, he makes the fact an excuse to settle on the reserve to which his wife belonged and thus appropriate lands to which, under the law, he has no right whatsoever. The Indians of these reserves are beginning to protest against these usurpations, which are likely to be a source of trouble in the near future.

Education.—As with affairs of all people, one of the most important factors, if not the most important, connected with Indian affairs is education. Seventeen schools, established by the Dominion government, for the instruction of Indian children, are in operation in the maritime provinces, some of which, comparatively speaking, are of a high standard, while others are susceptible of considerable improvement before they can be classed as efficient. Well equipped schools, in charge of capable teachers, belong to the former class; those conducted by teachers of indifferent ability, and poorly equipped, belong to the latter. I was surprised to find one school practically devoid of books, slates, copy-books, and other essential requisites, while in a couple of others the supply was limited and hardly suitable. The responsibility for that condition of things must lie either with the teachers or the agents, or with both, and I am inclined to the opinion that it should be shared between them. Teachers and agents must, or ought to, know that the department is quite liberal in providing all books and other requisites for use in the Indian schools, and always prompt in attending to requisitions made for such necessaries.

Religion, Progress, Characteristics.—The Indians of the maritime provinces are chiefly Micmacs and all profess the Roman Catholic religion. Many of them are industrious and ambitious, and as a result live comfortably and independently, owning and occupying roomy and well finished houses of modern type and build; but unfortunately these are exceptions, and I fear that the majority are more content to eke out a livelihood in the easiest way possible, never making provision for the future, and always expecting that the government will come to their assistance at critical times. As a rule, they are moral in character, and readily amenable to the laws of the land, except in one respect, where sanitation is concerned. In many cases, in fact I should say the majority of cases, their houses are untidy and unclean, veritable breeding

grounds for ill health and disease. How such conditions may be improved is a problem, as sanitary laws seem to be impossible of enforcement among them.

I have, &c.,

A. J. BOYD,

Indian Superintendent.

PRINCE EDWARD ISLAND,

MICMACS OF PRINCE EDWARD ISLAND,

HIGGINS ROAD, May 22, 1908.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—I have the honour to transmit my annual report and statistical statement for the year ended March 31, 1908.

Reserve.—There are two reserves in this superintendency, viz.: Lennox Island reserve and the Morell reserve. The former is an island situated in Richmond bay; it contains 1,320 acres.

The Morell reserve is situated on lot 39 in King's county, it contains 204 acres of excellent land.

Population.—The population of this superintendency, comprising both reserves and other localities in Prince Edward Island, is 276.

Occupations.—The principal occupations are farming and fishing during the spring and summer months. Lobster-fishing is very remunerative, for this shell-fish is in abundance in Richmond bay, and sells at a good price.

Education.—There is but one school, situated on Lennox island, attended by sixteen children, who are making fair progress.

Buildings.—A lobster-cannery was built on Lennox island reserve last winter by an Indian named Joseph Bernard, but he is unable to can his lobsters this summer, for he could not obtain a license from the Department of Marine and Fisheries, so he has to sell them alive at a reduced price.

There were four buildings erected this year; the lobster-cannery mentioned above, one dwelling-house, which is well finished inside and outside and painted, one barn, and a store for fish.

Health and Sanitation.—There has been a great deal of sickness during the past year of various kinds, and many deaths have occurred in consequence.

Temperance.—Those living on the reserve, with a few exceptions, are temperate.

Religion.—These Indians are all Roman Catholics. They have a church, built some years ago, which is a credit to them.

I have, &c.,

JOHN O. ARSENAULT,

Indian Superintendent.

PROVINCE OF MANITOBA,
BIRTLE AGENCY,
BIRTLE, April 16, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report, together with the agricultural and industrial statistics for the financial year ended March 31, 1908.

Tribe.—There are five reserves in this agency, four are occupied by the Saulteaux and one by the Sioux or Dakotas.

The Saulteaux are a branch of the Ojibbewa tribe and receive annuity yearly. The Sioux receive no annuity. They are part of the band of Sioux who came to the Dominion of Canada after the Minnesota massacre and who refused to return to the United States. They were given a reserve here by the Dominion government, also some cattle and farm implements to enable them to make their own living by farming and raising cattle, which they are doing to-day very successfully.

BIRD TAIL SIOUX BAND NO. 57.

Reserve.—This reserve has an area of 6,400 acres, and is located at the junction of the Bird Tail creek and the Assiniboine river. The land is a light loam and in the valley of the Assiniboine heavy clay, fertile, and is suitable for the growing of wheat, corn, and root crops of all kinds. There is a good portion of the valley meadow, which yields a fair average amount of good hay in the rainy season. Part of the hay crop is also secured on sections 26-14-27, west of the first meridian. There is about 600 acres in wood, mostly scrub, consisting of oak, elm, maple and poplar. The Assiniboine river borders the south and west portion of the reserve, and the Bird Tail creek runs through the northwest portion. The valley of the Bird Tail creek is wooded, principally poplar, and in many places there is great growth of wild fruits.

The Grand Trunk Pacific railway runs through the reserve, along the valley of the Assiniboine river, hugging the hills, and crosses the Bird Tail creek, in a northwesterly direction.

Beulah is the nearest post office, being 5 miles east, and Birtle, 12 miles north.

Owing to the light hay crop, all the wheat and oat straw is saved and fed to stock during the winter months.

KEESEEKOOWENIN'S BAND, NO. 61.

Reserve.—This reserve is located on the Little Saskatchewan river and on the southern base of the Riding mountains, and has an area of 6,660 acres. This includes the fishing station at Clear Water lake, about 20 miles northeast of the reserve, near Elphinstone. The soil is a black loam, some parts of the valley being very stony and unfit for cultivation; most of the cleared land, however, is fertile and suitable for raising grain and root crops of all kinds. The pasturage for stock is getting less each year, on the cleared land, as it is being cultivated and fenced. There is good grazing, however, in the wooded sections, as there are numerous small lakes and open places, where the animals can feed and have water.

In the valley along the Little Saskatchewan river, which runs north and south through the reserve, there are large meadows, which supply the bulk of the hay

required for stock. Around the numerous small lakes and ponds small quantities of hay can also be cut. There are about 3,883 acres in wood, mostly small poplar and willow, with some spruce and tamarack at Clear Water lake. The Canadian Northern railway (Clan William branch) runs southeast of the reserve, and Elphinstone, about a quarter of a mile from the south boundary, is the nearest post office.

WAYWAYSEECAPPO'S BAND, NO. 62.

Reserve.—This reserve has an area of 24,960 acres, and is located about 15 miles northeast from Birtle and is 5 miles west of Rossburn, Man. The Bird Tail creek runs through the northeast corner of the reserve. There are about 19,000 acres in wood, mostly poplar and willow. The large poplar is suitable for building houses and stables, and the remainder makes good fire-wood, and the large willows are used for fence posts. In the southern and western portions there are numerous lakes and ponds and hay meadows. The soil is a heavy black loam and is suitable for the growing of all kinds of grain and root crops, also the raising of stock. Most of the north half of the reserve is thickly wooded and the south open prairie, with occasional bluffs of poplar and willow.

GAMBLER'S BAND, NO. 63.

Reserve.—This reserve has an area of 774 acres, and is situated near Silver creek. The Assiniboine river is on the west side, and Binscarth, Man., a small town on the northwestern branch of the Canadian Pacific railway, is 5 miles northeast from the reserve. The soil is a black sandy loam, with poplar bluffs and some scrub oak and mostly all good farming land.

ROLLING RIVER BAND, NO. 67.

Reserve.—This reserve has an area of 12,800 acres, and is situated about 8 miles north of Basswood, Man., a small village on the Canadian Pacific railway (Minnedosa and Yorkton section). The land is undulating, with a great deal of poplar and willow brush. There are numerous lakes and sloughs. Four of the lakes contain fish. The hay-supply is obtained around the lakes and sloughs. The Rolling river runs through the eastern portion of the reserve. The soil is a black loam and suitable for grain-growing and root crops. Owing to the hilly and rough nature of the land, it being heavily wooded with poplar and willow, it is hard for the Indians, unaccustomed as they have always been to this sort of work, to make the rapid progress that might be expected of them.

There are about 7,800 acres in wood, principally poplar and willow. The Canadian Northern railway (Clan William branch) runs about two miles north of the northern boundary of the reserve. The nearest post office is Rolling River, Man.

REMARKS APPLYING TO THE WHOLE AGENCY.

Population.—The population of each band is as follows:—

Bird Tail Sioux band, No. 57	74
Keeseekoowenin's band, No. 61	128
Waywayseecappo's band, No. 62	182
Gambler's band, No. 63	12
Rolling River band, No. 67	93
Total population	489

Health and Sanitation.—The health of the Indians, on the whole, during the past year was fairly good. There were no serious epidemics. Colds, however, were very prevalent. The principal cause of death was consumption and pneumonia amongst the infants. Consumptives, who are not in too bad a state, are now being taken care of in the tent hospital, Waywayseecappo's reserve. The scrofulous cases treated in the hospital, by operation, numbered over thirty, and in every case a cure was effected. There is no doubt that the work accomplished during the past year has been a source of credit to the medical officer, Dr. T. A. Wright, and nurse C. Johnston, who is in charge of the hospital. It has a record now that applications from Indians of other agencies are being received for admission to the hospital. They are told all will be welcome to come. There are now three patients from Pelly agency being treated for scrofula.

The Indians, as a rule, move into tents for the summer and fall months, which decidedly improves their health, especially those affected with weak lungs. All refuse which has accumulated during the winter months around their houses is raked up and burned as soon as the snow disappears. Most of their houses are lime-washed inside and out during the summer, and on the whole are kept clean and tidy, some exceptionally so, and it is a pleasure to visit them.

The Indians generally are clean about their persons, and in most instances they are neatly dressed and look prosperous when visiting the towns in the vicinity of their reserves.

Resources and Occupations.—The members of the Bird Tail Sioux band, No. 57, are practically all farmers, raising wheat, corn and potatoes. They have also cattle and some few horses. All have good gardens and raise a quantity of vegetables of all kinds. The women make bead-work, moccasins, baskets and mats, and generally find ready sale for them at fair prices. They add to their earnings by the sale of wild fruits, senega-root and a small catch of fur.

The members of Keeseekoowenin's band, No. 61, make their living, some farming, raising cattle and horses, some hunting and fishing, and a number of the young people are employed as domestics and labourers. Nearly all heads of families have small gardens. The older members of the band make their living hunting, fishing and gathering senega-root. A number of the women make bead-work, baskets, mats and moccasins and tan hides. Considerable money is made also by the sale of wild fruits.

The Indians of Waywayseecappo's band, No. 62, make their living by hunting, sale of dry wood and hay, a little farming, raising cattle, gathering senega-root, tanning hides, and a number work out during the seeding and harvest time, making good wages. The women make bead-work, moccasins, baskets and mats and gather and sell wild fruits during the fruit season.

The members of the Rolling River band, No. 67, make their living by farming and raising cattle, hunting, sale of dry wood, senega-root, wild fruits and working out for farmers and on threshing gangs in the fall. Owing to this reserve being thickly wooded, rough and hilly, it is difficult to clear, and farming is carried on only in a small way. A small herd of cattle runs on the reserve. The hay-supply is limited, especially in wet seasons, and no great interest is taken by the Indians to increase their herds on this account. The members of this band, with a few exceptions, provide a good living for their families during the year.

John Tanner, on the Gambler's reserve, is a well-to-do and up-to-date farmer. He cultivates more than 150 acres of land, raises cattle, horses, pigs and poultry. He has a good house, stables and granary and a first-class equipment for working his farm.

Buildings.—The dwelling-houses are mostly log ones, with shingled roofs, a great many having kitchens attached. There are also a number of good frame houses and a number of shanties, mostly of good size. The stables are log ones, and are being improved each year. One new frame stable was erected during the year. Granaries

and storehouses are also being improved. Considerable improvement is being made in the class of dwelling-houses and stables now being erected by the progressive Indians on each reserve.

Stock.—Horses and cattle are in good condition. The past winter was a mild one and very favourable for stock. Feed was plentiful, and there are large quantities of hay left over. The bulls were wintered satisfactorily and are now in good condition. The calf crop was fair. The horses used by the Indians who farm are, generally speaking, very fair ones and are well cared for by the owners. The mares are bred to good stallions.

Farm Implements.—The members of the Bird Tail Sioux band, No. 57, have each the necessary farm implements to carry on their work ; i.e., walking, sulky and gang ploughs, drag and disc harrows, seed drills, binders, mowing-machines, wagons, &c.

The Saulteaux bands are well equipped with farm implements, having a number of walking and sulky ploughs, drag and disc harrows, seed drills, binders, wagons, &c.

Good care is taken of these implements, and nearly all are under cover during the winter months.

Education.—There is one boarding (Birtle boarding school) and one day school in this agency. The Birtle boarding school is located in the town of Birtle, on the north side of the Bird Tail creek. The building has been refitted and renovated, is well ventilated and has modern conveniences, in the way of baths, lavatories, &c. The only drawback is the poor water-supply. A quarter-section of land has been purchased by the church authorities (Presbyterian) for the purpose of cultivating more land and giving the boys a better training in general farm work. The farm is about two miles from the school. There is an attendance of about 48. The progress made in the school-room and in household training during the year has been satisfactory. The school is under the management of the Rev. W. W. McLaren, B.A., who has an excellent and competent staff to assist him.

The day school (Okanase day) is located on the Keeseekoowenin's reserve, No. 61, near Elphinstone, Man. The teacher, Miss Murray, is doing her best to advance her pupils; the attendance is very irregular and discouraging, but nevertheless, some improvement has been made during the year, especially amongst the pupils who attend regularly. There is an average attendance of about five.

Characteristics and Progress.—The past year has been a fair one. These Indians, with some exceptions, are bright and intelligent and are gradually assimilating the habits and ways of their white brothers. The better the class of settlers in the vicinity of their reserve, the better progress is being made by the careful industrious Indians. They lack, however, the staying qualities that are essential for success, and are easily discouraged and will give up for very trifling causes. A death in the family, is reason enough to give up farming, for a year or two, neglect their stock and roam about, picking up a very precarious living. The past season, notwithstanding the setback to the crops and the light fur-catch, which curtailed their earnings to some extent, did not result in any extra hardships to the Indians.

Owing to the late spring, the acreage had to be reduced, and, as the growing season was unfavourable for the maturing of the crops, parts of the grain crops were caught by the frost in the latter part of August, reducing the yield per acre.

Slow but steady progress is being made, and the acreage under cultivation is increasing.

Temperance and Morality.—The majority of the Indians are not addicted to the use of intoxicants. No matter what precautions are taken, there are a number of the Indians on each reserve who will run the risk, and procure for themselves and their friends liquor, when they have the opportunity and the money to pay for it. A number of the Indians (Keeseekoowenin's band) were fined during the year for being

drunk, and there was one conviction for supplying liquor to Indians. There were several other cases, but we failed to get convictions. I see no reason to change my views with regard to the moral standard of the average men and women in this agency. Their morality is of a high standard considering the circumstances in which they live; of course there are exceptions, but on the whole, the morality of the Indians in this agency is improving.

Crops.—The season was very unfavourable, the spring being very late and the growing season discouraging.

The harvest began in the early part of September and was general on the 15th. Threshing began November 12. The returns from threshing-machines were below the previous year. The oat crop, however, was very good, although some of it was slightly frosted. Wheat was a fair sample and graded mostly No. 3 northern, and averaged 9 bushels per acre; oats, 30 bushels.

General Remarks.—The year just closed, has been a fairly good one. The crops on the reserves, with the exception of the Waywayseecapo's, escaping serious damage from frost in August, last. Good prices were obtained for wheat, oats and potatoes. The wheat averaged 86c. per bushel; oats 30c., and potatoes from 80c. to $1 per bag. The earnings of the Indians were expended in paying off old debts and getting supplies and clothing for the winter. The past winter's trapping was very poor, very little fur being caught. The prices for fur were lower than last year, with the exceptions of muskrat and wolves, which were higher.

A new mission-house has been erected the past year, on the Waywayseecappo's reserve (Presbyterian) and the Rev. Robert Bailey, of Rossburn, has been appointed to the mission. The clerk, Mr. F. C. Millar, has been transferred from this agency to the Moose Mountain agency.

The missionaries on the different reserves have continued their assistance in the advancement of the Indians under our united charge.

Inspector S. Swinford made his inspection of the agency, reserves and schools in March last.

I have, &c.,

G. H. WHEATLEY,
Indian Agent.

MANITOBA SUPERINTENDENCY,
CLANDEBOYE AGENCY,
SELKIRK, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the report of the Clandeboye agency for the fiscal year ended March 31, 1908.

This agency comprises three reserves, namely, St. Peter's, Brokenhead River and Fort Alexander.

ST. PETER'S BAND.

Reserve.—This reserve is situated about 22 miles north of the city of Winnipeg, and adjoins the town of Selkirk, in the province of Manitoba. The reserve, including the parish of St. Peter, is 8 miles wide from east to west and 12 miles long from north to south. Within the reserve is the parish of St. Peter. The parish is 4 miles from east to west, 2 miles on each side of the Red river, by 9 miles long. Outside of

the parish the land on the west side of the river, known locally as the 'outer two miles' is subdivided into sections, quarter-sections and legal subdivisions, according to the general survey of the country. The land in the outer two miles to the east of the Red river, excepting that part adjoining East Selkirk, is not subdivided. The parish is divided into river lots, varying in width from two to five chains, and running from the river to the line dividing the inner and outer two miles. The parish lots from one to fifteen are within the corporation of the town of Selkirk. Six of these lots are patented and nine are Indian lands. Out of the total of 246 parish lots, 52 have been patented for a number of years, and recently 20 more have been recommended for patent. The parish was an organized settlement before the 'transfer' of the western country to Canada. There has always been a mixture of races on this reserve, the white people on the patented lands and Indians on the remainder. The white settlers had deeds or what was known as paper titles from the old chief, Peguis. Many of those who afterwards went into treaty hold these deeds dated from before the transfer.

Tribe.—The people who occupy this reserve are the Chippewa, Saulteaux and Swampy Cree.

Population.—The population of this reserve is 1,168.

Health and Sanitation.—The general health of the members of this band this year has been fairly good. There has been no epidemic of any kind.

Occupations.—Their occupations for the year have been cutting wild hay, fishing, cutting wood and earning something as labourers in the town of Selkirk and in Winnipeg, and on railway construction. A few spend all their time on the farms. These few live in the outer two miles on the west side of the river. There has not been much demand for labourers and they have been in very straightened circumstances during the winter. Last season heavy rains during July and August prevented them from cutting large quantities of hay, and this, together with the very low price of hay during the winter, deprived them of one of their best resources for living during the winter. Wood also was at a very low price.

Buildings.—The houses and stables are nearly all built of logs with shingled roofs, a few with brick chimneys, and the rest with stovepipes in the roofs. The houses contain several rooms, and are fairly commodious.

Stock.—The band have about 160 head of horses and between 600 and 700 head of cattle among them. They are not good stockmen, but succeed in raising some stock to sell.

Farm Implements.—All those who are engaged in agriculture are fairly well supplied with implements, but the department gives them assistance each year, buying a few ploughs.

Education.—There are six day schools on the reserve, four carried on under the auspices of the Church of England, one under the Roman Catholics, and one established about a month ago by the department, attended mainly by the pupils of the Church of England. There are more than 200 children on the reserve of school age, but the average attendance during the year was less than fifty. It is almost impossible to get teachers to supply these schools. It is difficult for them to get good boarding-houses within a convenient distance of the school, and those who have provincial certificates get much larger salaries for teaching in the public schools. These people should have the very best teachers. Those who are trained in the science of education only can rouse an interest in education among the parents and children.

Characteristics and Progress.—St. Peter's Indians are fairly industrious, but have the characteristics of all Indians to some extent, that is, to work for a short time until they have sufficient to maintain themselves for a time and then take a rest. It would be difficult to say whether they are becoming richer or poorer; they are not making any marked progress.

Temperance and Morality.—They are fairly law-abiding, but addicted to drink. Proximity of the town of Selkirk to their reserve affords them too many opportuni-

ties of obtaining liquor. A great many of them are fined, but it seems to have very little effect except to make them poorer. They make great efforts to gather money to pay the fine, selling cattle or sacrificing anything they have in order to avoid going to jail. The family suffer in consequence of the sacrifice.

Remarks.—This reserve has been surrendered during the year. The Hon. Chief Justice Howell was appointed a commissioner to investigate and report upon old claims for land in the reserve. These claims were based upon occupation from before the 'transfer' of the western country to Canada, and upon sales made to white settlers by Indians before the Indian Act with regard to selling land came into force. During the time the sittings were being held, Justice Howell discussed with the Indians, the conditions of a surrender. In September, 1907, Mr. Pedley, Deputy Superintendent General of Indian Affairs was invited to come to Selkirk and make the final arrangements and take the surrender. By its conditions, each head of a family of five was to receive a patent for eighty acres of land, and others in the same proportion. It will take about 20,000 acres to allot to the Indians, for which they are to receive patents. Three thousand acres is to be set aside for common hay ground. The balance of the reserve, about 25,000 acres, is to be sold and half the proceeds divided among the members of the band, and the other half to be funded for their benefit. There was also another reserve of land, amounting to 75,000 acres, along the shores of Lake Winnipeg, to be set aside.

The Indians of the reserve are all half-breeds, and have lived on the lands they now occupy, some of them for nearly a century. The granting of patents in the above proportions practically covers all the land they occupied before the treaty was made, and which they have always claimed as private property. They have refused to concede that they surrendered their private rights to their lands when going into treaty, but were willing to concede that they had lost the power to sell or transfer the property save to other members of the band. A surrender could not have been made upon terms that would have overlooked these private rights.

BROKENHEAD BAND.

Tribe.—The tribe occupying this reserve belong to the Swampy Cree nation.

Reserve.—The reserve is situated along the Brokenhead river where it empties into Lake Winnipeg. It is situated in township 16, ranges 6 and 7, east. It contains 21,000·90 acres and is covered by a heavy growth of poplar and tamarack. It is inaccessible by water in large boats. Small sail-boats and canoes are able to get into the mouth of the river.

Population.—The population is 153.

Health and Sanitation.—The people have been healthy. A few deaths have occurred among the old people, one of these being the chief's wife. They keep their houses fairly clean, and in the summer-time move into tents adjoining their houses.

Occupations.—Their occupations are principally fishing, hunting and gathering snake-root in the summer. Some of the young men leave the reserve during the summer, looking for employment as labourers.

Buildings.—The houses are all log, well built, with only one room.

Stock.—They have a few cattle, and there are several pairs of small ponies on the reserve.

Education.—There is one day school on the reserve, conducted under the auspices of the Church of England. It is well attended and the pupils have made good progress.

Characteristics and Progress.—The old people are pagans, and many of those of the younger generation who outwardly profess adherence to the church are affected by paganism. The reserve is heavily timbered and nothing can be affected in the way

of agriculture except by heavy outlay in clearing and breaking, and this the Indians are not able to do.

Temperance and Morality.—The people of this reserve are temperate and moral, as Indians go, and give very little trouble to the authorities.

Remarks.—The department last year, on petition from the band and supported by the settlers of the surrounding district, built a road across the reserve and a bridge over the Brokenhead river. Of the amount expended the Indians earned about $4,000, and it was of great assistance to them during the winter, as they got well supplied with provisions and clothing.

FORT ALEXANDER BAND.

Tribe.—These people belong to the Cree nation.

Reserve.—This reserve is situated in townships 18 and 19, range 9, east, and borders on the east shore of Lake Winnipeg. The Winnipeg river traverses the reserve in a northwesterly direction.

Population.—The population of this band is 479.

Health and Sanitation.—There has been no abnormal sickness in the reserve during the year. The rate of mortality was low.

Occupations.—These Indians subsist by hunting, fishing and as labourers. For the last three or four years there has been a great deal of timber got out along the Winnipeg river, and the Indians have found it easy to get employment.

Buildings.—The houses are the usual type, log walls, shingled roofs, and contain one room.

Stock.—The people have very few cattle and horses. This is owing largely to the fact that there is not very much hay-land on the reserve or even in that part of the country. The open land on the reserve is muskeg, which it is said might be easily drained if it were possible for the water to get through the high banks along the river.

Farm Implements.—There are not a great number of implements on the reserve, in fact there is not much use for them.

Education.—There are two day schools on the reserve, one on each side of the river, both conducted under the auspices of the Church of England. There is a good boarding school conducted under the auspices of the Roman Catholic Church with an attendance of sixty pupils. The buildings are two story, frame, steam-heated, lighted with gas and having all modern conveniences. Around the school they have a fine garden in which are grown the vegetables used in the school.

Characteristics and Progress.—These Indians are industrious, temperate and moral, and seem to be ambitious to improve their condition.

I have, &c.,

J. O. LEWIS,
Indian Agent.

MANITOBA SUPERINTENDENCY,
RAINY RIVER DISTRICT—FORT FRANCES AGENCY,
FORT FRANCES, ONT., April 13, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908, together with statistical statement.

Agency.—This agency comprises the following bands, viz.: Hungry Hall, Nos. 1 and 2; Long Sault, Nos. 1 and 2; Manitou Rapids, Nos. 1 and 2; Little Forks, Couch-

iching, Stangecoming, Niacatchewenin, Nickickousemenecaning, Seine River, Lac la Croix and Sturgeon Lake, being 14 in all, with a total population of 875.

Tribe or Nation.—The Indians of this agency belong to the Ojibbewa tribe.

HUNGRY HALL BANDS, NOS. 1 AND 2.

Reserves.—These reserves, Nos. 14 and 15, are situated at the month of Rainy river and contain 6,280 acres. There is very little merchantable timber on these reserves, but considerable dead tamarack, which is only fit for fire-wood. The land is a rich clay loam.

Population.—The population of these two bands is 47.

Health and Sanitation.—The general health of all the bands in this agency has been good. There were several cases of diphtheria in the Couchiching band last summer, the first case being fatal, owing to its being too far advanced before the doctor was notified; but prompt action was taken and the disease stamped out. There was also one case of diphtheria on the Niacatchewenin and Long Sault reserves, but prompt action being taken, the disease was not allowed to spread. Measles was prevalent amongst the Indians of the Manitou Rapids band during the winter, one case proving fatal.

Occupations.—The Indians work at taking out dry cord-wood in the winter, and for settlers and saw-mills in the summer, besides fishing and hunting.

Buildings.—Their houses are all built of logs with shingled roofs, and are very comfortable.

Temperance.—The Indians along the Rainy river are very much addicted to the use of intoxicants, which they can easily procure on the American side, and although the Minnesota State law is very severe on persons supplying liquor to Indians, it is difficult to secure sufficient evidence to convict, as it is an indictable offence, and tried by jury. The Federal authorities at Washington sent a special agent to Northern Minnesota and this district in connection with the supply of intoxicants to United States and Canadian Indians, during last winter, which I trust will have some good results.

LONG SAULT BANDS, NOS. 1 AND 2.

Reserves.—These reserves, Nos. 12 and 13, are situated on the north bank of the Rainy river, opposite the rapids of that name. Their combined area is 11,413 acres. The land is a rich clay loam and is well adapted for stock-raising and farming.

Population.—The population of these two bands is 72.

Occupations.—These Indians work at taking out ties and posts, from dead and fallen timber, work in saw-mills, steamboats and for settlers, besides fishing and hunting.

Education.—There is a very good day school here under the auspices of the Church of England. The attendance has been good, and fair progress made.

MANITOU RAPIDS BANDS, NOS. 1 AND 2.

Reserve.—These bands occupy reserve No. 11, which is situated on the north bank of the Rainy river, opposite the rapids of that name. The area is 5,736 acres.

The land is a rich clay loam, and is well adapted for farming and stock-raising.

Population.—The population is 101.

Occupations.—These Indians work at taking out ties and posts from dead and fallen timber, and during the past winter earned $2,500 at this work; they also work for lumber camps, saw-mills and for settlers, besides fishing and hunting, and always make big wages.

Buildings.—All the Indians residing along the Rainy river have fairly good log buildings.

Stock.—This band takes good care of its stock, and is the only one in this agency that shows a desire to do so. These Indians use the milk and some make butter.

LITTLE FORKS BAND.

Reserve.—The reserve of this band is situated on the north bank of the Rainy river, 12 miles west of Fort Frances, and opposite the mouth of the Little Forks river, and is designated as reserve No. 10. It contains an area of 1,920 acres. The land is a rich clay loam.

Population.—The population of this band is 45.

Occupations.—These Indians work at taking out timber, working in lumber camps and for settlers. They also fish and hunt.

WILD LANDS RESERVE, NO. 15M.

Reserve.—This reserve consists of 24,358 acres and is owned in common by all the above-mentioned Rainy river bands. There are large quantities of merchantable timber on this reserve, consisting of pine, tamarack, spruce and cedar. The greater portion of the reserve is a rich clay loam. It adjoins the Hungry Hall reserves, near the mouth of the Rainy river.

COUCHICHING BAND.

Reserves.—The reserves of this band are situated on Rainy lake and Stangecoming bay, 3 miles north of Fort Frances, and are designated as 16A, 16D and 18B. They contain an area of 15,947 acres. There is considerable good land, but the greater portion is rocky and broken. There is very little merchantable timber on these reserves, owing to frequent fires in the past.

Population.—This band has a population of 176.

Occupations.—The resources of this band are many, consisting of working in lumber camps, river-driving, saw-mills, for settlers, cutting and hauling cord-wood, fishing and hunting. A number of the women get considerable work in washing and scrubbing at Fort Frances. One of the band owns a small steamboat, for which he paid $1,000.

Buildings.—Their houses are well built, and very comfortably furnished, and nearly all are kept clean and neat.

Education.—The Fort Frances boarding school, which is under the control of the Roman Catholic Church, is situated on the northeast end of the agency reserve and adjoining the reserve of this band.

The building is an excellent one, and could conveniently accommodate 50 pupils; it is heated by steam, and has all the latest modern improvements in the way of lavatories and closets. It is lighted by acetylene gas, which is stored in the engine-house, a distance from the school. All the doors open outwards and there is a splendid system of fire-escapes. There are three large tanks in the attic, which hold 2,100 gallons of water; this water is pumped from the lake 2,010 feet from the bank, by a gasoline engine, with a capacity of 30 gallons per minute. There are at present 49 pupils in this school, 21 boys and 28 girls. The staff consists of the principal, the Rev. H. M. Brassard, one brother, and four reverend sisters.

Temperance.—On the whole, this band is a fairly temperate and moral people

STANGECOMING BAND.

Reserve.—This reserve, No. 18C, is situated on Rainy lake, about 8 miles north of Fort Frances and contains 3,861 acres, the greater portion being barren rock, and the timber is of poor quality, except at the north end, where there is some good tamarack.

Population.—The population of this band is 51.

Occupations.—These Indians live principally by working in lumber camps and saw-mills, and by fishing and hunting.

Education.—There are 10 children of this band attending the Fort Frances boarding school.

Temperance.—The Indians of this and the following bands are all addicted to the use of intoxicants.

NIACATCHEWENIN BAND.

Reserves.—The reserves attached to this band are 17A and 17B, and are situated about 26 miles northwest of Fort Frances, on the Northwest bay, in Rainy lake.

The area of these reserves is 6,201 acres. The greater portion is rocky and broken. There is considerable good timber on 17B, principally pine.

Population.—The population of this band is 64.

Occupations.—The young men get employment in lumber camps and saw-mills. but they principally live by hunting and fishing.

Education.—None of the children of this band have ever attended school.

NICKICKOUSEMENECANING BAND.

Reserves.—This band owns 26A on Red Gut bay, 26B on Porter's inlet and 26 C on Sand Island river, on Rainy lake. The combined area is 10,227 acres; a large portion of the land is rocky and broken.

Population.—The population of this band is 41.

Education.—There are two children of this band attending the Fort Frances boarding school.

Occupations.—These Indians live principally by hunting and fishing.

SEINE RIVER BAND.

Reserves.—This band has two reserves: No. 23A, extending from Wild Potato lake to Sturgeon falls, on Seine river; No. 23B is at the mouth of the Seine river. They contain a combined area of 11,063 acres. There is considerable good timber on these reserves, but the land is sandy and rocky.

Population.—This band has a population of 133.

Occupations.—These Indians live principally by hunting and fishing.

Education.—There is a day school at Wild Potato lake; the teacher, Mr. Peter Spence, is a treaty Indian. The attendance has not been good, owing to the nomadic habits of these people, but good progress has been made with those that do attend.

LAC LA CROIX BAND.

Reserve.—The reserve, No. 25D, belonging to this band is situated on Lac la Croix, near the boundary, about 100 miles east of Fort Frances, and contains 15,353 acres. There is considerable good timber on this reserve, but the land is poor.

Population.—The population of this band is 121.

Occupations.—The principal occupations of these Indians are fishing and hunting.

Education.—There is no school on this reserve.

STURGEON LAKE BAND.

Reserve.—The reserve allotted to this band is situated on Kawawiagamak lake, and contains an area of 5,948 acres.

Population.—The population of this band is 24.

Occupations.—These Indians depend entirely upon hunting and fishing for their subsistence.

I have, &c.,

JNO. P. WRIGHT,
Indian Agent.

MANITOBA SUPERINTENDENCY,
RAINY RIVER DISTRICT—KENORA AND SAVANNE AGENCIES.
KENORA, Ont., April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement for the year ended March 31, 1908.

KENORA AGENCY.

The agency headquarters are situated in the post office building, in the town of Kenora, Ont. This agency comprises the following bands, viz.: the Dalles, Rat Portage, Shoal Lake Nos. 39 and 40, Northwest Angle Nos. 33, 34 and 37, Buffalo Bay, Big Island, Assabaska, Whitefish Bay and Islington; being 12 in all.

THE DALLES BAND.

Reserve.—This reserve is situated on the Winnipeg river, about 10 miles north of the town of Kenora; area, 800 acres; and is well timbered with poplar, jack and Norway pine, and spruce, with a few small hay meadows.

Population.—The population of the band is 62.

Tribe.—All the Indians of this agency are Ojibbewas.

Health and Sanitation.—This band has had fairly good health during the year, grippe and influenza as well as prairie itch being the only sickness in the band. Sanitary precautions have been well observed, all refuse and garbage has been collected and burnt, and all the Indians have been vaccinated.

Occupations.—Working for the lumber camps and on the railway construction, hunting, fishing and berry-picking during the summer months, are the chief occupations.

Buildings.—All buildings, except one, which was built this year, are of logs, small but comfortable.

Stock.—This band has no stock of any kind.

Implements.—The band has all farm and other implements required, as no farming is done by these Indians.

Education.—Some of the children are sent to the Kenora and Cecilia Jeffrey boarding schools. Consequently there is no day school on this reserve, and the Indians take very little interest in the education of their children.

Characteristics and Progress.—These Indians are law-abiding, but on the whole they are indolent, and progress is slow.

Temperance and Morality.—There are a few of the band that may be considered temperate, but the majority of them are very much addicted to the use of intoxicants. Their morals are fair, no case of immorality of any kind having been reported to me during the year.

RAT PORTAGE BAND.

Reserve.—This band holds two reserves, viz.: 38A and B, on Clearwater bay and Matheson's bay, Lake of the Woods, area 13,280 acres; and are wooded with tamarack, jack-pine spruce and poplar.

Population.—This band numbers 77 persons.

Health and Sanitation.—Generally speaking, the health of this band has been fair; there are a few cases of old standing sickness amongst them, the effects of scrofula, for which but little can be done. Sanitary measures have been well observed, and all the Indians vaccinated.

Occupations.—Working for the lumber camps and cutting wood for contractors, hunting, fishing, and in the summer picking berries and wild rice, are the chief occupations.

Buildings.—These are built of logs and are small but comfortable and are generally kept clean and tidy.

Stock.—This band has no stock, except a couple of ponies.

Farm Implements.—This band is well supplied with all requisite implements, both for farm and garden work.

Education.—A number of the children attend the Cecilia Jeffrey and Kenora boarding schools; hence there is no day school on the reserve, the parents taking no interest in the education of their children.

Characteristics and Progress.—These Indians are not progressive, but rather indolent, with the exception of George Inneese, who is a very progressive man; he has a good and comfortable house, which is kept clean and in good order, and he is always working and making a good living for himself and family. These Indians are law-abiding, civil and courteous.

Temperance and Morality.—The majority of the band are very much addicted to the excessive use of intoxicants, yet there are a few of them that may be counted temperate, and their morality will compare favourably with that of any of the bands on the Lake of the Woods.

SHOAL LAKE BANDS, NOS. 39 AND 40.

Reserves.—These reserves are situated on the west and northwest shore of Shoal lake, and are partly in the province of Manitoba; area, 16,205 acres, timbered with cedar, poplar and spruce, with a small area of hay and agricultural land.

Population.—The combined population is 144.

Health and Sanitation.—These Indians have been visited with an outbreak of measles, influenza and grippe, and three deaths occurred from cerebro-spinal meningitis at the Cecilia Jeffrey boarding school in December last; since which time the health of the band has improved, and at present there is no sickness on the reserve of any account. The chief of band No. 39 died on December 2, 1907, from consumption. All premises are kept clean and all persons suffering from any contagious disease are isolated. All the Indians have been vaccinated.

Occupations.—These Indians work for the lumber camps, taking out cord-wood fish and hunt, and in the summer work on the fish boats and steamers on the lake as well as pick berries and wild rice.

Buildings.—These are of logs, well built and of good size, well ventilated and kept clean and neat. This is largely due to the example given by the Cecilia Jeffrey school, by the principal and staff, who take great interest in the Indian welfare and surroundings.

Stock.—These Indians have only a few animals, which are well cared for and properly fed and watered. But cattle-raising is not a success with any of these Indians.

Farm Implements.—They are well supplied with all necessary implements.

Education.—The majority of the children of school age are attending the Cecilia Jeffrey boarding school, and are making good progress. Others are at the Kenora boarding school and doing well.

Characteristics and Progress.—The majority of these Indians are industrious and make a good living, while others are very indolent and will only work when they are obliged to do so in order to get food. They are law-abiding and some of them are much better off than formerly.

Temperance and Morality.—The majority of the Indians of these bands are addicted to the use of intoxicants to excess, while a number of them can be counted temperate. They are fairly moral.

NORTHWEST ANGLE BANDS, NOS. 33, 34 AND 37.

Reserves.—These bands hold the following reserves, viz.: 33A, 34B on Whitefish bay; 33B, 34C, 37B and 37C at the Northwest Angle, part of which is in the province of Manitoba and part in Ontario; 34 and 34C on Lake of the Woods, 37A and 34B on Shoal lake, 37 on Big island and 37 on Rainy river. The combined area is 20,983 acres. There is a quantity of good timber on all these reserves.

Population.—The combined population is 124.

Health and Sanitation.—The health of the bands has been good, no complaints of any kind having reached me; all refuse has been collected and burnt, and sanitary precautions are generally well observed. All the Indians have been vaccinated, and premises are kept neat and clean.

Occupations.—Hunting, fishing, working in the lumber camps, berry and wild rice picking in the summer are the chief occupations of these bands.

Buildings.—These are composed of logs, small but comfortable.

Stock.—The bands have only a few cattle, which are well cared for, but the increase is slow, as the Indians take very little interest in this industry.

Farm Implements.—They are well supplied with all the implements they require, as very little farming is done by these bands.

Education.—The Indians take no interest in the education of their children, consequently there are no schools on these reserves, as the children could not be got to attend owing to the parents' objections.

Characteristics and Progress.—But little progress has been made by these Indians, some of them are industrious, while the majority are indolent; but they are law-abiding.

Temperance and Morality.—The majority of these Indians will make use of intoxicants if they can get them in any way. They are civil, and their morals are fairly good.

BUFFALO BAY BAND.

Reserve.—This reserve is situated on Buffalo Bay point, Lake of the Woods, in the province of Manitoba; area, 5,763 acres. On this reserve there is a small quantity of timber, with an amount of agricultural land, and hay swamps.

Population.—The population of this band is 30.

Health and Sanitation.—The health of the band has been fairly good, sanitary precautions have been well observed, and all the Indians have been vaccinated.

Occupations.—Working for the lumber camps and on steamboats, fishing, hunting, berry and wild rice picking, are their principal occupations.

Buildings.—These are composed of logs, well built, small but comfortable, and are kept clean and neat.

Stock.—This band has no stock except one yoke of oxen.

Education.—There is no school on this reserve; the Indians, being all pagans, object to any form of education, but some of their children have been sent to the boarding schools.

Characteristics and Progress.—The majority of the band are industrious, and are doing well, while some of them are indolent, and put in their time roving from one place to another, they are law-abiding and civil.

Temperance and Morality.—They are fairly temperate, and their morals can be considered good.

BIG ISLAND BAND.

Reserves.—This band has eight reserves, viz.: 31A, B, C, D, E, F, G and H, on Big island and Nangashing bay, Lake of the Woods; combined area, 8,737 acres, fairly well timbered with merchantable timber, and a considerable amount of agricultural land, and hay swamps.

Population.—The population of this band is 151.

Health and Sanitation.—The health of these Indians has been fair to good, influenza and grippe being the chief cause of any sickness amongst them. Sanitary measures have been well carried out, and all the Indians vaccinated.

Occupations.—A number of the band work in the lumber camps during the winter, and with the fishermen and on steamers during the summer. They also pick berries and wild rice.

Buildings.—All buildings are of log, of fair size, and are comfortable and clean, and fairly well ventilated.

Stock.—These Indians have no cattle except one yoke of oxen. They have a number of horses, which are well cared for.

Farm Implements.—They have all requisite implements, both for farm and garden, as but little farming is done.

Education.—All these Indians are pagans, and refuse to have a missionary or teacher on the reserve. A few of the children have been sent to the boarding schools, and are making good progress.

Characteristics and Progress.—These Indians are making slow progress, but are somewhat better off than they were a few years ago, and on the whole they are industrious and law-abiding.

Temperance and Morality.—A portion of the band are given to the use of intoxicants whenever they can obtain them, the other portion can be considered temperate; and their morals are fairly good.

ASSABASKA BAND.

Reserves.—This band holds in all nine reserves, viz.: 35A, B, C, D, E, F, G, H and J, on Nangashing and Obabikong bays, Big and Little Grassy rivers, Lake of the Woods; combined area 21,241 acres, well timbered with good merchantable timber, and a considerable amount of good agricultural land, interspersed with hay swamps and meadows.

Population.—The band consists of 147 souls.

Health and Sanitation.—The health of the band has on the whole been fairly good; there are a few cases of scrofula and other kindred diseases amongst them, for

which but little can be done. They were also visited with an attack of grippe and influenza, from which they have now recovered. Their premises are kept clean, and all sanitary precautions have been observed; all the Indians have been vaccinated.

Occupations.—These consist in fishing, hunting, berry and wild rice picking, with the keeping of a few gardens and patches of potatoes, and a number of the men work in the lumber and tie camps, and on the steamers in the summer.

Buildings.—These are all of logs, small, but neat, comfortable, clean and well ventilated.

Stock.—These Indians have no stock of any kind.

Farm Implements.—They are well supplied with implements.

Education.—The members of this band being all pagans, they take very little interest in the education of their children; consequently there is no school on the reserve; but a few of the children attend the boarding schools, in which they are doing well.

Characteristics and Progress.—A majority of this band are industrious, while some of them are very indolent and keep wandering from one place to another, which in a measure prevents the progress of the band. Most of these Indians are civil and law-abiding.

Temperance and Morality.—The members of this band are fairly temperate, but some of them will indulge in the use of intoxicants whenever they can get them. Their morals are fairly good.

WHITEFISH BAY BAND.

Reserves.—This band has three reserves, viz.: 32A, B and C, on Yellow Girl and Assabaskung bays; area 10,599 acres, on which there are some good hay swamps and timber.

Population.—This band numbers 51 persons.

Health and Sanitation.—Prairie itch, grippe and influenza have been prevalent amongst them; but they have fully recovered, and are in good health now. Sanitary precautions have been well carried out, all refuse being raked up and burnt; all the Indians have been vaccinated.

Occupations.—These Indians engage in hunting, fishing, berry-picking, working for the tie camps, and in summer on the boats, while some of them have very nice gardens and potato patches.

Buildings.—These are of logs, well built, and most of them with shingled roofs, with bed-rooms upstairs of good size, comfortable and kept clean and neat.

Stock.—They have no cattle, but a few horses.

Farm Implements.—They are well supplied with all implements they require, both for farm and garden use.

Education.—There is no school on this reserve, but a few of the children attend the Kenora and Cecilia Jeffrey boarding schools. The Indians, being nearly all pagans, take but little interest in the education of their children.

Characteristics and Progress.—The Indians of this band are industrious and are becoming better off each year; their houses and the reserve in general have a prepossessing appearance on approaching from the lake, and the Indians are civil and law-abiding.

Temperance and Morality.—I regret to say that this band is very much addicted to the use of intoxicants, which they appear to be able to get every time they come into town. A strict watch has been kept on them at such times, but without any success. The majority of the band are moral, while it is said that a portion of them are not what they should be.

ISLINGTON BAND.

Reserves.—This band holds three reserves, viz.: Islington, Swan Lake and One Man's Lake; the combined area, 24,899 acres, well timbered with good merchantable

timber, and considerable good agricultural land, interspersed with some good hay meadows.

Population.—The population of this band is 213.

Health and Sanitation.—Prairie itch, measles and a form of grippe have been prevalent in the band, from which they have nearly all recovered and are now doing well. Sanitary measures have been well attended to, all refuse having been collected and burnt; all the Indians are vaccinated.

Occupations.—These Indians make a good living by working for railway and lumber camps, acting as guides and as canoemen, hunting, fishing, and during the summer make a lot of money by picking berries and wild rice, for which they always get a good market; and some of them have very fine gardens and potato patches with good results.

Buildings.—Their buildings are of logs, of good size, with shingled roofs and well fitted inside, and with fairly good furniture, clean and comfortable.

Stock.—The stock on this reserve is doing fairly well, and the increase is fair; all are well taken care of.

Farm Implements.—The band is well supplied with all the farm and garden implements required.

Education.—The school on this reserve was closed last June owing to non-attendance of pupils, as the Indians would not send their children regularly. A number of them attend the Cecilia Jeffrey and Kenora boarding schools, and are making good progress.

Boarding Schools.—The Kenora and Cecilia Jeffrey schools are doing good work, both here and at Shoal Lake. They are well conducted, and proper discipline maintained; the pupils are happy and contented, and the progress is good.

Characteristics and Progress.—The members of this band are rather industrious, and are becoming better off every year; yet I find there is room for improvement. They are law-abiding.

Temperance and Morality.—Generally speaking, these Indians are addicted to the use of intoxicants, which they always manage to get when they come to Kenora, although a strict watch is kept on them while here. Their morals are fairly good, with room for improvement.

SAVANNE AGENCY.

The agency headquarters are at the town of Kenora, Ont. The agency comprises the following bands, viz.: Eagle Lake, Wabigoon, Lac des Mille Lacs, Ignace, Frenchman's Head, Lac Seul, Wabuskang and Grassy Narrows.

EAGLE LAKE BAND.

Reserve.—This reserve is situated on the east side of Eagle lake; area 8,882 acres. There is very little timber on this reserve, but there is quite an amount of good farm land and considerable hay meadows.

Tribe.—All the Indians of this agency are Ojibbewas.

Population.—This band has a population of 65.

Health and Sanitation.—The health of these Indians has been fairly good ; they have had the usual epidemic of grippe and influenza, but nothing serious. Sanitary precautions have been well observed, all rubbish has been raked up and burnt, so far as could be done at present, and all the Indians have been vaccinated.

Occupations.—These Indians engage in cutting cord-wood, working in the tie and lumber camps in the winter, and on the railway and for the mills in the summer, also hunting and fishing and berry and wild rice picking, from which they derive a large benefit in the way of food and clothing.

Buildings.—These are all of log, small in size, but kept fairly clean and comfortable and well ventilated.

Stock.—This band has no stock, only a few horses.

Farm Implements.—The band is well supplied with all the implements required.

Education.—The school on this reserve is under the auspices of the Church of England, Mr. James Fox, teacher. Owing to the small attendance, I have been ordered to close this school on March 31, 1908, as the Indians take no interest in the education of their children. However, some of the children have been sent to the Kenora and Cecilia Jeffrey boarding schools.

Characteristics and Progress.—The Indians of this band are industrious and becoming more independent every year, and in most cases they are law-abiding and civil.

Temperance and Morality.—The majority of this band are very much addicted to the use of intoxicants, otherwise they are fairly moral.

WABIGOON BAND.

Reserve.—This reserve is located on the Little Wabigoon lake; area, 12,872 acres, on which there is considerable merchantable timber, hay and agricultural lands.

Population.—The population of this band is 97.

Health and Sanitation.—The health of the band has on the whole been fairly good ; scrofula and grippe have been the chief ailments in the band during the year. All rubbish has been gathered up and burnt or carted away, and the Indians have been vaccinated.

Occupations.—A number of the band work in the tie and lumber camps and others take out wood, while a few of them make a living by hunting and fishing, as well as wild rice and berry picking in the summer-time.

Buildings.—These are of a rather inferior class, small, but kept clean and neat.

Stock.—They have no stock of any kind.

Farm Implements.—They have a good supply of implements.

Education.—There is no school on this reserve, as the Indians could not be got to take any interest in the education of their children; but several have sent their children to the Elkhorn industrial school, and others to the boarding school at Kenora.

Characteristics and Progress.—The Indians are rather of an industrious nature, but progress is very slow; they are civil and law-abiding.

Temperance and Morality.—The majority of this band are temperate, but will not refuse to take intoxicants if they are presented to them. Their morals are fairly good.

LAC DES MILLE LACS BAND.

Reserves.—This band has two reserves, viz.: No. 22A 1, on Lac des Mille Lacs, and No. 22A 2, on Seine river; the combined area is 12,227 acres, well timbered with good merchantable timber and having some good farm-land.

Population.—The population of this band is 63.

Health and Sanitation.—The health of this band has been good. There have been 5 deaths in the band during the year, 3 from consumption of old standing, and 2 from scrofula, also old standing cases. They have also had grippe and prairie itch to contend with, but are all well now. Their houses are generally kept clean and neat, all filth and garbage being collected and burnt, and all the Indians have been vaccinated.

Occupations.—These Indians fish and hunt, and pick berries and wild rice in summer, and work in the camps in winter.

Buildings.—These are of logs, small, but comfortable and clean.

Stock.—They have only one ox, and no other cattle.

Farm Implements.—They are supplied with all the implements they require, as but very little farming is done by these Indians.

Education.—The Indians of this band are all pagans and take no interest in education in any form.

Characteristics and Progress.—The Indians of this band are fairly industrious, but progress is slow; they, however, are improving in manners and becoming more law-abiding.

Temperance and Morality.—They are fairly temperate, no complaints having been made in regard to their temperance or morals.

LAC SEUL BAND.

Reserve.—This reserve is situated on the southeast shore of Lac Seul or Lonely lake. A fragment of this band, known as the Frenchman's Head band, is located about 15 miles south on the same reserve. There is another portion of this band located on Sawbill lake about 4 miles north of Ignace Station. The Lac Seul reserve has an area of 49,000 acres, on which is a quantity of fine timber. A fire passed over a portion of this reserve last June and did considerable damage both to timber and Indian dwellings; but, as the burnt timber has been sold, I find the Indians are doing very well in taking out ties for the contractors.

Population.—This band has a population of 582.

Health and Sanitation.—The band has been troubled with a form of prairie itch, measles, grippe and influenza, all of which were attended to by the medical officer with good results. Sanitary precautions have been well carried out, and all the Indians have been vaccinated.

Occupations.—Hunting, fishing, wild rice gathering, taking out ties for the contractors, and the care of a few gardens and potato patches, are the chief occupations of the band; besides they work for the Hudson's Bay Company in freighting and as canoemen and guides.

Buildings.—These are of logs, well built, and of fair size, and well furnished with suitable furniture, kept clean and neat, and well ventilated.

Stock.—The stock they have is not of a very good class, and the increase is not at all satisfactory, owing to the fact that the cattle have to roam about and hunt for themselves during the summer, and are very much troubled with the flies; but in winter they are well taken care of both as to food and water.

Farm Implements.—These Indians have all the implements they can possibly make use of, both for farm and garden use.

Education.—There is no school on this reserve, as the parents of the children take but little interest in the education of their children. The establishment of a boarding school on the reserve, is expected in the near future or as soon as the railway reaches the Indians; they have a large number of children of school age.

Characteristics and Progress.—These Indians are industrious, are doing well and becoming better off each year. The chief, Henry Ackewance, and Councillor James Bunting are showing them a good example, and doing all they can to advance the interest of their band.

Temperance and Morality.—The majority of these Indians are temperate, while there are a few that will make use of intoxicants if they can at all get them. In other ways they are moral, no complaints having been made.

WABUSKANG BAND.

Reserve.—This reserve is located on the Wabuskang lake, area 8,042 acres, fairly covered with good merchantable timber, interspersed with some fine hay meadows.

Population.—This band has a population of 53.

Health and Sanitation.—The health of these Indians has been fairly good, no complaints having reached me further than that they have been troubled with grippe. All the band have been vaccinated, and sanitary measures carried out.

Occupations.—Hunting, fishing, and working for the railway contractors and tie camps, are the chief occupations of these Indians.

Buildings.—These are of logs, of small size, but comfortable, and generally kept neat and clean.

Stock.—These Indians have no stock of any kind.

Farm Implements.—They have all the implements required.

Education.—The Indians of this band, being pagans, take no interest in education. Consequently there is no school on this reserve, as it would not be possible to get an average attendance.

Characteristics and Progress.—The progress of this band is very slow, owing to the fact that these Indians are constantly moving about from one place to another, and are seldom found on their own reserve, except at treaty payments. They are industrious and work for the tie camps and on the railroad, and make a good living. They are civil and law-abiding, and are becoming better off each year.

Temperance and Morality.—They are fairly temperate, but some of them will make use of intoxicants when they are placed in their way. In other ways they are moral.

GRASSY NARROWS BAND.

Reserve.—This reserve is situated on the English river; area, 10,244 acres. There is considerable merchantable timber on this reserve as well as some good hay-lands.

Population.—This band has a population of 133.

Health and Sanitation.—The health of this band has not been very good, several deaths having occurred from a form of low fever, grippe and influenza; they have also been troubled with prairie itch and other kindred diseases, but at present they have fully recovered. All refuse has been gathered up and burnt, and sanitary precautions well observed; all the Indians have been, so far as practicable, vaccinated.

Occupations.—These Indians hunt and fish and pick berries and wild rice, and work for the lumber and tie camps, in which way they make a good living.

Buildings.—These are of logs, small in size, but are kept in proper order, neat and clean, and well ventilated.

Stock.—These Indians have no stock.

Farm Implements.—The band is well supplied with all requisite implements, both for farm and garden purposes.

Education.—There is no school on this reserve, owing to lack of interest by the parents in the education of their children.

Characteristics and Progress.—The members of this band are of rather an industrious nature, and are becoming better off each year; but there is room for further improvement; they are civil and law-abiding.

Temperance and Morality.—Quite a number of the band are temperate, but there is another lot of them who are very much addicted to the use of intoxicants. Generally speaking, they are fairly moral, no complaints having been made during the year.

GENERAL REMARKS.

Throughout this agency, with the exception of the Eagle Lake and Wabigoon bands, all the Indians may be considered fairly prosperous and thrifty, they are becoming more provident each year and on the whole they are more temperate and law-abiding than in the past, and everything is moving along in a satisfactory manner.

I have, &c.,

R. S. McKENZIE,
Indian Agent.

MANITOBA SUPERINTENDENCY,
NORWAY HOUSE AGENCY,
NORWAY HOUSE, KEEWATIN, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR, I have the honour to submit my annual report for the Norway House agency for the fiscal year ended March 31, 1908.

In this agency there are twelve reserves. Most of them are situated on the shores of Lake Winnipeg.

The physical features of all the reserves in this agency are practically the same. Rock and muskeg, covered with moss, scrub, and timber would be a correct description of the whole district. In some places are deposits of soil, sufficient for gardens, and in such places along the shores of the lake or on the banks of the rivers the Indian makes his home.

As there are practically no farming or ranching lands, agriculture is out of the question. Hunters, trappers and fishermen their fathers were, the present generation is the same, and the future inhabitants can follow no other pursuits. All must rely on fishing in the summer and on hunting and trapping in the winter.

BLACK RIVER BAND.

Tribe.—These Indians are Saulteaux.

Reserve.—This reserve is situated on the east shore of Lake Winnipeg near the south end of the lake, at the mouth of Little Black river. The area of the reserve is 2,000 acres.

Population.—There are 67 persons in this band, an increase of 4 over last year.

Health and Sanitation.—There were rumours of a serious nature, which on investigation, fortunately, were found to be untrue, of small-pox in connection with this and Hollowwater reserve. No other serious cases of sickness were reported.

Occupations.—In summer these Indians are engaged in fishing, berry-picking, as deck-hands on boats and some at mill work. In winter they are engaged in hunting, trapping, and fishing through the ice.

Buildings.—The buildings are of log, with shingle roof, neat in appearance, and should be comfortable and healthy if properly ventilated.

Stock.—Very few cattle are kept, as the country is not adapted for stock-raising.

Farm Implements.—Garden tools only are used at this place.

Education.—There is one day school on this reserve. The children are irregular in attendance, and the parents do not fully appreciate the advantage of a good education; the result, therefore, is not as good as might be accomplished if there were some system of compulsory education in vogue.

Characteristics and Progress.—In former times game and fish were plentiful, requiring very little effort to obtain a good livelihood. This led to indolence and improvidence. Now that game, fish and fur are scarcer, the Indians are compelled to be more industrious. Thrift, however, is not a dominant factor with them; they will not make provision for the future.

Temperance and Morality.—No cases of intemperance have been reported to me from this place; the Indians seem to be a law-abiding class of people. The moral standard might be higher, and is surely, if slowly, being made so. The indolent

habits of the Indian lead naturally to immorality, and it is to the credit of this band that I have no reports of immorality from this reserve.

HOLLOWWATER RIVER BAND.

Tribe.—These Indians belong to the Saulteaux tribe.

Reserve.—This reserve is situated about 40 miles north of Black river, at the mouth of the Hole river, also on the east side of Lake Winnipeg. The area is 3,316 acres.

Population.—There are 95 persons on this resrve as against 97 last year, a decrease of 2.

Health and Sanitation.—No epidemics were reported from this place, but tuberculosis still continues its ravages among the Indians.

Occupations.—Hunting, trapping and fishing are the general means of support. Some of the Indians are employed part of the time at lumbering.

Buildings.—The buildings are the usual log structure, with shingle or pole roof.

Stock.—Very few cattle are kept on this reserve; the country is not suited for stock-raising.

Implements.—Only garden tools are used here.

Education.—There is one day school on this reserve. The result is not as good as might be hoped for, owing to the irregularity of attendance of the pupils.

Characteristics and Progress.—Industrious and law-abiding though these Indians are, still their improvident nature is a great detriment to them.

Temperance and Morality.—The members of this band are temperate, and their moral standard, while not as high as it might be, is slowly being raised.

BLOODVEIN RIVER BAND.

Tribe.—These Indians are Saulteaux.

Reserve.—This reserve is also on the east side of Lake Winnipeg, at the mouth of Bloodvein river, about 40 miles north of Hollowwater. The area is 3,369 acres. The physical features are the same as those of the two other reserves.

Population.—The population of this band is 52, a decrease of 2.

Health and Sanitation.—No serious cases of sickness have been reported from this place.

Occupations.—Hunting, fishing and trapping are the regular employments.

Buildings.—The buildings are the usual log structure, with pole or shingle roof.

Stock.—The country is not suitable for stock-raising. The band has no stock.

Education.—The school has been closed at this place. The children were away from the reserve with their parents nearly all the time.

Characteristics and Progress.—Fishing and hunting give these Indians a good living, but thrift is not a dominant trait among them.

Temperance and Morality.—I have had no complaints of either intemperance or immorality from this reserve.

FISHER RIVER BAND.

Tribe.—These Indians are Swampy Crees.

Reserve.—This reserve is situated on the west side of Lake Winnipeg, at the mouth of Fisher river, at the foot of Fisher bay. It contains 9,000 acres. This is the only reserve in this agency where agricultural pursuits could be followed. These advantages are made use of by the Indians. Where the land is not cleared or used for hay-land, it is densely covered with timber. This will be a great help to them when means of transportation is available.

Population.—This band numbers 420, an increase of 9.

Health and Sanitation.—The health of this band is better than the average, due probably to the better class of houses they have built.

Occupations.—Hunting, and trapping to a less degree, fishing, stock-raising and lumbering to a greater degree, are the occupations followed.

Buildings.—Better class buildings are the rule here. Log houses with shingled roofs, and two or three rooms are general.

Stock.—There is considerable stock on this reserve. The Indians know and appreciate the advantage of improving it.

Farm Implements.—Very little grain is raised here, and the band is fairly well supplied with implements for hay-making.

Education.—There is one day school on this reserve. The attendance is more regular than usual and, therefore, the results are better.

Characteristics and Progress.—This band is more progressive than the average, more saving, and, as a result, is in better circumstances.

Temperance and Morality.—This band has a very high ideal moral standard. I have had no complaints of intemperance or immorality from this reserve.

JACKHEAD BAND.

Tribe.—These Indians are Saulteaux.

Reserve.—This reserve is situated on the west side of Lake Winnipeg, about 40 miles north of Fisher river. The area is 2,860 acres. The physical features are the same as on the east side of the lake.

Population.—The population of this band is 64, a decrease of 3.

Health and Sanitation.—No cases of contagious disease or serious sickness were reported from this reserve.

Occupations.—These Indians live by hunting, trapping and fishing.

Buildings.—The buildings are the usual log structure.

Stock.—A few cattle only are kept at this place.

Farm Implements.—Garden and haying implements only are in use here. Of these they have a fair supply.

Education.—There is a day school on this reserve. The attendance is irregular and the results not as satisfactory as might be.

Characteristics and Progress.—These Indians are a law-abiding band. They are compelled by circumstances to be industrious, but do not provide for future contingencies.

Temperance and Morality.—No complaints of immorality or intemperance have reached me from this reserve.

BERENS RIVER BAND.

Tribe.—These Indians are Saulteaux.

Reserve.—This reserve is situated on the east side of Lake Winnipeg at the mouth of the Berens river, near the northern boundary of the province of Manitoba. The area is 7,400 acres. The country is chiefly rock and muskeg.

Population.—The population of this band is 286, a decrease of 9.

Health and Sanitation.—The decrease in this band is accounted for by the removal from this reserve of three families. The general health has been fairly good. This is no doubt partially due to the good work done by Mrs. Oke, wife of the resident missionary. She is a trained nurse, and has done much good work among the Indians.

Occupations.—Fishing and freighting for the Hudson's Bay Company in summer, and hunting and trapping in winter, are the chief occupations of the Indians of this band.

Buildings.—The buildings are the usual log buildings, a little better than the average.

Stock.—Very little stock is kept on this reserve.

Education.—There is one day school. It is fairly well attended. The teacher is efficient and has the confidence of the parents and the pupils.

Characteristics and Progress.—Very little progress is made by this band. They are industrious and law-abiding, but are not frugal or thoughtful for the future.

Temperance and Morality.—The members of this band are not addicted to the use of intoxicants. Their moral standard might be raised still higher. This is surely, if slowly, being accomplished.

LITTLE GRAND RAPIDS BAND.

Tribe.—These Indians are Saulteaux.

Reserve.—This reserve is about 120 miles up the Berens river. The area is 4,920 acres, mostly rock and muskeg.

Population.—This band numbers 149, an increase of 6.

Health and Sanitation.—The health of this band is extra good, only one death reported last year.

Occupations.—These men are hunters, fishermen and trappers.

Buildings.—These Indians live in tents the year round.

Stock.—They have no stock.

Farm Implements.—Only garden tools are used here.

Education.—There is a day school on this reserve kept open in summer. The interest is very small, the progress very little.

Characteristics and Progress.—In the summer these men fish enough for their daily consumption; the rest of the time they lie around and have a good time. In the winter they hunt and trap for their necessities. Very little can be said about progress among them.

Temperance and Morality.—With no means of obtaining liquor, they are temperate. They are pagans, and their moral standard is not high.

PEKANGEKUM BAND.

Tribe.—The Indians of this band are Saulteaux.

Reserve.—This reserve is situated about 140 miles farther up the Berens river than Little Grand Rapids; area, 2,080 acres; physical features also the same.

Population.—This band numbers 127 as against 129 last year, a decrease of 2.

Education.—There is no school at this place.

General Remarks.—This band is a part of the Little Grand Rapids band, and the description of Little Grand Rapids band applies to this band in all other matters.

POPLAR RIVER BAND.

Tribe.—These Indians are Saulteaux.

Reserve.—This reserve is situated about 65 miles north of Berens river, on the east side of the lake, at the mouth of the Poplar river, in the district of Keewatin. The area is 3,800 acres. It is rocky and covered with tamarack, and between the rocks are muskeg swamps.

Population.—This band numbers 143, a decrease of 6.

Health and Sanitation.—No cases of serious sickness and no epidemics have been reported to me by the dispenser at this place.

Occupations.—Hunting, fishing and trapping are the only employments these Indians have.

Buildings.—The buildings are the usual log structure, neat and clean in appearance, but too small for the number of persons who live in them.

Stock.—There is no stock on this reserve.

Farm Implements.—Only garden tools are used.

Education.—There is a day school on this reserve. But little interest is shown by the parents; the progress, therefore, is slow.

Characteristics and Progress.—The same characteristics seem to prevail here as on the other reserves; the Indians are industrious at times, then a lazy spell follows. They take no thought for the morrow and make no provision for the future.

Temperance and Morality.—No complaints have reached me of either intemperance or immorality from this reserve.

GRAND RAPIDS BAND.

Tribe.—These Indians are Swampy Crees.

Reserve.—This reserve is situated on the west side of Lake Winnipeg at the mouth of the Saskatchewan river; the area is 4,646 acres. The natural features are the same as on the other reserves.

In bygone days this was a very important place. The Hudson's Bay Company used to send most of its supplies for western posts through this place; but since the railroads have been built, this has been changed and now Grand Rapids has become a place of less importance.

Population.—This band numbers 124, as against 127 last year, a decrease of 3.

Health and Sanitation.—I have received no reports of epidemics or serious illness from this reserve.

Occupations.—Formerly freighting was one of the chief employments of these Indians. Now they have to rely on hunting, fishing and trapping.

Education.—There is a day school on this reserve. The parents seem quite interested in the progress and running of the school.

Characteristics and Progress.—These people are industrious and peaceful. No marked progress is noted and no deterioration.

Buildings.—The buildings are the usual log structure, neat and clean in appearance

Stock.—There are a few cattle kept on this reserve; no other kind is of any use to them.

Farm Implements.—Only garden tools are used.

Temperance and Morality.—I have received no complaints of either intemperance or immorality from this reserve.

NORWAY HOUSE BAND.

Tribe.—The Indians of this band are Swampy Crees.

Reserve.—This reserve is situated on Little Playgreen lake, about 25 miles down the Nelson river. The area is 10,340 acres. The physical features are the same as on the other reserves.

Population.—The population is the same as last year, 520.

Health and Sanitation.—The health of this band has been about as usual; no epidemics; very little serious sickness. As on all the other reserves in this agency, tuberculosis is the great scourge of the Indian. All known sanitary precautions have been explained to them. Cleanliness of premises has been enforced, cleanliness of person repeatedly urged, also to avoid crowding in houses. A doctor has been stationed on this reserve this winter, also a trained nurse. These conditions have improved the situation immensely, at the same time they have shown clearly the strong hold tuberculosis has on the Indian race, and the absolute necessity of having medical attendance at their command.

Occupations.—Hunting, fishing, trapping and freighting are the chief employments.

Buildings.—Neat, well-built houses of logs, with shingle roofs, are the rule.

Stock.—Only a few cattle are kept here.

Farm Implements.—Garden tools only are used here.

Education.—At Norway House there are: a boarding school, a day school, Methodist; a day school, Church of England; and school kept by the Roman Catholic missionaries. Irregular attendance leads to slow progress in the day schools. Regular attendance, good food and warm clothes make the boarding school more successful. Education is certainly a live question on this reserve. The results are, therefore, better than at some other places.

Characteristics and Progress.—This band appears to be in fairly comfortable circumstances. As a rule, these Indians are active, industrious and law-abiding.

Temperance and Morality.—This band is strictly temperate, and compares favourably with other bands morally.

CROSS LAKE BAND.

Tribe.—The Indians of this band are Swampy Crees.

Reserve.—This reserve is about 90 miles down the Nelson river. The area is 7,760 acres, and the reserve is similar in physical features to the other reserves.

Population.—This band numbers 370 as against 359 last year, an increase of 11.

Health and Sanitation.—The health of these Indians has been generally good. They are gradually learning the precautions necessary to retain good health and are governing themselves accordingly.

Occupations.—Hunting, fishing, trapping and freighting are the chief occupations.

Buildings.—The buildings are the usual log structure.

Stock.—A few cattle only are kept here.

Farm Implements.—Garden and a few hay-making tools are the only implements used here.

Education.—There are two day schools on this reserve. One is under the care of the Methodist Church and the other under the care of the Roman Catholic Church. There is very considerable interest taken in school matters by the Indians, but irregular attendance of pupils prevents the best results being obtained.

Characteristics and Progress.—Very little change can be noticed in this band. The progress, if any, is very slow.

Temperance and Morality.—No reports of intemperance or immorality have reached me from this band.

I have, &c.,

C. C. CALVERLEY,

Indian Agent.

MANITOBA SUPERINTENDENCY,
PORTAGE LA PRAIRIE AND MANITOWAPAH AGENCIES,
PORTAGE LA PRAIRIE, April 22, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of the Portage la Prairie and Manitowapah agencies for the fiscal year ended March 31, 1908.

PORTAGE LA PRAIRIE AGENCY.

TREATY NO. 1.

Reserve.—This agency comprises five reserves.

Roseau river reserve, situated at the confluence of Red and Roseau rivers, has an area of about 5,670 acres. The reserve is well adapted for both grain-growing and stock-raising, the soil being rich and plenty of hay being available. The grain crop last year was very disappointing to the Indians, as all of it was frozen badly, so badly that it cannot be used for seed, and the yield was small. The reserve is level prairie with sufficient wood for fuel and timber, along the streams, large enough for small buildings.

Roseau River Rapids reserve is situated on the Roseau river, about 18 miles from its mouth. Its area is about 2,800 acres. It is in the Green Ridge settlement. It has the advantage of having a higher elevation than the reserve at the mouth of the river, and of being in the midst of a splendidly settled district. The Indians gain much from the example around them and are trying to become good farmers.

Long Plain reserve is situated about 15 miles southeast of Portage la Prairie, on the north side of the Assiniboine river, in township 10, range 8, west of the 1st meridian. It has an area of 10,816 acres. The reserve contains some good farming land, though some of it is light. The grain crop was fair, and the prices for wheat being higher than in 1905, the Indians received about as much money. The reserve is well wooded, though the forest is being depleted.

Swan Lake reserve is situated on the north side of Swan lake, in township 5, range 11, west of the principal meridian, and contains 13,037 acres. It is in a good grain-producing district and both hay and water are available in plenty. Last year the crop of grain was completely frozen, and the yield exceedingly low, but quite a number of the Indians have considerable land fall ploughed for wheat this year.

Indian Gardens reserve is situated near the south bank of the Assiniboine river. It comprises section 11, township 9, range 9, west of the 1st meridian, and contains 640 acres. The land is first-class for arable purposes, but there is no wood and very little hay. The crop last year was very small and very weedy.

Tribe.—The Indians in this agency are all of the Ojibbewa tribe, with more or less strain of white man's blood.

Population.—The population of the different bands is as follows : Roseau, including the Rapids, 181 ; Long Plain, 121 ; Swan Lake, including Indian Gardens, 109 ; making a grand total of 411.

Health and Sanitation.—The health of the Indians this year has been fairly good, no epidemics have prevailed, and the majority of deaths can be charged to consumption in its different phases. On all the reserves at this date, the Indians have not yet

moved into their tents, but as soon as spring opens up they will do so, and this, under their condition of living, is, I think, the best thing they can do, as when they are living in tents they are continually moving short distances, thus preventing any accumulation of filth around them.

Occupations.—On the Roseau reserve, grain-growing and stock-raising are both carried on. The farming operations are not being carried on as systematically and successfully as could be desired, as the steady work necessary to successful agriculture appears to be contrary to Indian nature. The necessary forethought to prepare land one year for seeding during next, is altogether contrary to their nature. I am inclined to think many of them work for the settlers much better than they do for themselves when on the reserve. A good deal of money is raised in this way and by the sale of hay and wood in the winter . At Roseau Rapids the same conditions exist. It is to be regretted that stock-raising is not carried on more extensively. The pasture-land is excellent and there is plenty of hay. The wandering portion of the different bands earn considerable at digging senega-root and picking berries, and a little is earned at hunting and fishing, cutting cord-wood, logs and rails.

At Swan Lake reserve both grain-growing and stock-raising are carried on. The condition of the stock and the progress of the industry is very similar to that at the Roseau reserves, and the same reasons attributed.

On the Indian Gardens reserve there is no stock, as there is not sufficient hay available, unless it were cultivated, which would be a difficult matter. Grain-growing only is carried on and with indifferent success.

On the Long Plain reserve, with a few exceptions, the Indians manifest little interest in agriculture, and it is almost impossible to induce the members of this band to attend to their crops properly.

Buildings, Stock and Farm Implements.—All the houses are of logs; there are a few good ones, but the tent predominates; some few have shingle roofs and nearly all have lumber floors.

The cattle are not cared for properly. A considerable number died in the winter of 1906, on account of the severe winter, and not having proper attention. At Swan Lake reserve they do not appear to take any interest in their cattle, and prefer farming. There are some very good herds, but the numbers are comparatively small. It is seldom that those with the largest herds fail to make provision for them. A large number of cattle are lost every year through lack of attention. The Indians are well supplied with implements and tools.

Education.—There are two schools in this agency, one at Swan Lake, at which it has been difficult to get a regular attendance, and one at Roseau Rapids, where the attendance is larger, but the progress very slow.

Characteristics and Progress.—Progress on the reserves is apparently very slow, but there are many reasons for this. An Indian will work for a white settler from seven in the morning till six in the evening without thought of shirking his work, but a few hours a day is the best effort he can put forth for himself on the reserve. All they appear to consider is the present day; they never think of to-morrow.

Temperance and Morality.—Intemperance and immorality run hand in hand. Punishment and fines appear to have little effect, and it is impossible to obtain information from the Indians as to their source of supply.

General Remarks.—The Indians up to the present time have fared well, as the winter has been so mild, and those that wanted to work could do so. The hunting, from reports received up to date, has not been very successful. The Indians at Long Plain received a fair price for dry poles right at their door, which helped them considerably.

PORTAGE LA PRAIRIE SIOUX.

These Indians own and live on a tract of land, about 26 acres, purchased by themselves within the town limits. They have also lot No. 14 of the parish of Port-

age la Prairie, given them by the Dominion government; but up to date have refused to make any use of it. The adults are a big strapping type of Indian, but many of the children show signs of tubercular trouble. These Indians earn a good living working for the farmers of the neighbourhood. When they all return home in the fall, they usually squander a lot of money in intoxicating liquors and paying fines in the police court, but they very seldom give any information as to where they got the liquor.

There is a Sioux boarding school in the town with accommodation for 40 pupils, and the government allows a per capita grant for 20. There are usually from 20 to 25 pupils in the school, and more could be obtained did the per capita grant allow.

Mr. W. A. Hendry is principal of the school, and his sister, Miss Hendry, is assistant matron.

The principal, his wife, and Miss Hendry, are all interested in the spiritual welfare of the band, under the auspices of the Presbyterian Church, and hold a weekly service in the village church, as well as many other meetings. Mr. Hendry is a most efficient officer, and I cannot commend too highly the work that he is accomplishing with the co-operation of his wife and sister.

MANITOWAPAH AGENCY.

There are ten reserves in this agency, of which Sandy Bay is in Treaty No. 1, Shoal River in No. 4, and the rest in No. 2.

RESERVES.

Sandy Bay reserve is situated in township 18, range 9, west of the principal meridian, on the southwest shore of Lake Manitoba. It has an area of 12,160 acres, the greater part of which is covered with scrub and bush. It is not suitable for grain farming, although there is sufficient good land for gardens, and there is a good supply of hay.

Lake Manitoba reserve is situated on the northeast shore of Lake Manitoba, in township 22, ranges 8 and 9, west of the 1st meridian, and has an area of 9,472 acres. It is much broken by the arms of the lake, is covered by a heavy growth of bush and timber, and quite unsuited for farming. There is enough good land for gardens and a good supply of hay.

Ebb and Flow Lake reserve is situated on the west shore of Ebb and Flow lake, in townships 23 and 24, ranges 11 and 12, west of the 1st meridian. It has an area of 10,816 acres. It is unsuitable for farming, but has a good supply of hay and plenty of timber.

Fairford reserve is situated on the Fairford river, in townships 30 and 31, range 9, west of the 1st meridian. It has an area of 11,712 acres. It is well supplied with good timber and hay and has plenty of good land for gardens.

Little Saskatchewan reserve is situated on the west shore of Lake St. Martin, in township 31, range 8, west of the 1st meridian, and has an area of 3,200 acres. It has a good supply of hay and wood, but is not adapted for farming.

Lake St. Martin reserve is situated on the north end of Lake St. Martin, in township 32 and ranges 7 and 8, west of the 1st meridian, and has an area of 4,032 acres; it is well wooded and has only a fair supply of hay, but is not adapted for farming.

Crane River reserve is situated on the east side of Crane river, in township 29, range 13, west of the 1st meridian, and has an area of 7,936 acres. A strip across the river with a good hay meadow has also been reserved for this band, as the reserve proper contains very little hay-land. There is a quantity of good spruce timber and sufficient good land for gardens.

Waterhen River reserve is situated on the south end of Waterhen lake, in township 34, range 13, west of the 1st meridian. It has an area of 4,608 acres. It has a good supply of timber and hay, but is unsuitable for farming.

Pine Creek reserve is situated on the west shore of Lake Winnipegosis, in township 35, ranges 19 and 20, west of the 1st meridian. Its area is about 12,000 acres. It is not adapted for farming, but is well supplied with hay and timber.

Shoal Lake reserve is composed of one small reserve on Swan lake and four small reserves near the mouth of the river. Altogether they have an aggregate area of about 5,500 acres. They are all well wooded with poplar and some spruce, have sufficient hay-land, but are not adapted for farming.

Tribe.—Nearly all the Indians in this agency are Saulteaux, but the Shoal River band are principally Crees. There are many French, English and Scotch half-breeds.

Population.—The population of the different bands at the last annuity payments was as follows : Sandy Bay, 291; Lake Manitoba reserve, 123; Lake St. Martin, 148; Ebb and Flow, 62; Fairford, 195; Little Saskatchewan, 123; Crane River, 42; Waterhen River, 51; Pine Creek, 216; and Shoal River, 161, making a grand total of 1,412.

Health and Sanitation.—The health of the Indians generally has been fairly good. On the Fairford, Little Saskatchewan and Lake St. Martin reserves there was an epidemic of measles last summer, causing the death of twenty-five. The usual coughs, colds, scrofula and consumption cases prevailed in all the reserves, but not to any greater extent than in former years.

The ordinary sanitary precautions are carried out, but the Indians move into their tents the first thing in the spring, even before the snow is all gone, and as they are continually moving short distances, it avoids any possibility of disease arising from want of sanitation.

Resources and Occupations.—Nearly all the Indians have small gardens, and over and above that, the raising of live stock is about the only civilized industry they can take up on their reserves, as the land is not suitable for grain-raising. The Indians that take an interest in their cattle are doing fairly well, but those who only keep a few head would do better if they went out of the business altogether and followed something they had more liking for. It is noticeable here as elsewhere that those who have the largest herds take a greater degree of pride in their stock than the owners of a few animals, and make proportionately better provision for them. Quite a lot of cattle are lost each year through inattention and carelessness.

The Indians earn considerable money in the winter in the lumber camps and cutting cord-wood, and in the summer by picking berries, digging senega-root, and in the fall good wages can be obtained by working in the harvest-fields. There is plenty of fish and there is no need for the Indians to suffer want.

Buildings and Stock.—All the buildings are of log and some have wooden floors and some have shingle roofs. The stables simply have log walls with poles and hay roofs. They are mudded and plastered in the fall and fulfil their requirements in the winter.

Education.—There are day schools in each reserve, except Crane River, and two at Fairford. The children show very little progress, as their attendance is very irregular owing to the migratory habits of their parents. There is a large stone boarding school adjoining the Pine Creek reserve, owned and conducted by the Roman Catholic Church, with a staff of professional teachers of the order of the Reverend Franciscan Sisters. The department allows this school a per capita grant for fifty pupils and fifteen day scholars.

The school has the full number of the grant and a number of extra boarding pupils supported by the institution. In connection with the school there is also a saw-mill and blacksmith shop. Another large school at Sandy Bay reserve is also conducted by the Roman Catholic Church. This school is splendidly equipped and has accommodation for fifty pupils. The department allows this school a per capita grant

for fifty pupils. Both schools are doing excellent work and fully merit the assistance they receive. Children can receive more benefit in one year in such institutions than they would probably receive during their whole childhood in their irregular attendance at the day schools.

Progress.—The progress of the Indians is certainly slow, but as long as they can make their living by hunting and fishing and working a day or two whenever they feel like it, they cannot be expected to show anything very wonderful in the way of advancement.

Temperance and Morality.—I have heard that liquor has been on several of the reserves in this agency, but I could not get any reliable information regarding the matter.

General Remarks.—The Indians are in fairly good health, were well clothed and apparently fairly comfortable and contented.

I wish to acknowledge with thanks the courteous and generous assistance rendered me by the day school teachers on all the reserves.

I have, &c.,
R. LOGAN,
Indian Agent.

PROVINCE OF MANITOBA,
SIOUX AGENCY,
GRISWOLD, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of this agency for the fiscal year ended March 31, 1908.

This agency is situate about 7 miles northwest of Griswold, a small village on the main Canadian Pacific railway line 158 miles west of Winnipeg. It comprises within its jurisdiction three reserves, (1) the Oak River reserve, No. 58; (2) the Oak Lake reserve, No. 59; (3) the Turtle Mountain reserve, No. 60.

OAK RIVER BAND, NO. 58.

Reserve.—Commencing at the point of section where the Assiniboine river crosses the surveyed road running north and south between sections Nos. 34 and 35, township 9, range 23, west of the principal meridian, and going north 6½ miles to the northwest corner post of section No. 34 of township No. 10, we have the western boundary of this reserve; thence from said corner post going easterly 3 miles to the northeast corner post of section No. 36 of the same township, we have the northern boundary; thence going south 3 miles to the intersection of the public road by the Assiniboine where a bridge crosses the river, we have the eastern boundary; from thence following the tortuous Assiniboine river to the point of section where we started, we have the southern boundary. The western, northern, and eastern boundaries are Dominion land surveyed roads; while on the south is the natural boundary of the Assiniboine river.

Within these well defined boundaries are 9,734 acres of a varied topography. Near the river along the southeastern boundary are very valuable hay-lands probably 3½ miles by ½ mile in width covering about 900 acres.

As we recede from the river and cross the meadow, the lands rise abruptly from the flat, and form a bold steep ridge the length of the reserve. In this ridge are

several deep ravines that have been cut out by great condensations of some former time and in which now grow the poplar, scrubby ash, and oak, which, together with the timber on the reserve side of the river form a fair building timber supply and fire-wood of about 750 acres.

On the southern end of the ridge and eastern side, left bare by these former washouts, are thousands of tons of boulders, fit for building purposes, and in plain sight are sand and gravel beds. Of this rough country of sand, gravel, and boulders, there are about 2,000 acres. The remainder of the reserve, of nearly 6,000 acres, is a rolling prairie of rich sandy loam, and 2,500 of this is under cultivation.

Tribe or Nation.—The band of Indians occupying this reserve, and indeed all the reserves of this agency, are Sioux and belong to the great Indian nation of Dakotas that so long and so persistently resisted the white migration from the eastern states to the west.

Population.—The total number of Sioux on this reserve is 279.

OAK LAKE BAND, No. 59.

Reserve.—This reserve is 5 miles north of the village of Pipestone, Manitoba, and covers 2,560 acres or 4 square miles. It occupies part of sections Nos. 33, 34 and 35 of township 7, range 26, and also part of sections 2 and 4, and the whole of 3, and part of sections 9, 10 and 11 of township 8, range 26.

The Pipestone river crosses this reserve, and upon each side of it is growing building timber and fire-wood, to the amount of 150 acres.

On the low lands adjacent are 200 acres of meadow, furnishing abundance of hay for use and for sale. The remainder of the surface of 2,200 acres is a sandy loam, of which about one-fourth is under cultivation.

Population.—The members of this band as mentioned before are all Sioux, and number 68 souls.

TURTLE MOUNTAIN BAND, No. 60.

Reserve.—This reserve, of one square mile, occupies section 31, township 1, range 22, west of the first principal meridian, and is 5 miles north of the international boundary line between Manitoba and North Dakota, and 12 miles southeast of Deloraine.

The surface is rough and rolling, contains 10 acres of small timber and brush, some few acres of hay-lands, also some 450 acres of arable lands of rich sandy loam.

Population.—The number of souls on this small reserve is 45. Little is done in the way of farming, only 10 acres are cultivated, and that for the purpose of growing feed for horses. A living is made by working for their white neighbours, by trapping, selling fire-wood, tanning skins caught in the hunt, and bead-work.

Health and Sanitation.—Although the three reserves under this agency are widely separated, yet the people are one, in that they are well known to each other, in that they are all Sioux or Dakotas, marry and intermarry, therefore the remainder of this report will be applicable to all the members of the three reserves. The full number of Indians on the three reserves is 392.

This fraction of the Dakotas retains the characteristic hardiness and vigorous constitution of the race. An examination of the vital statistics forwarded under separate cover will show its birth-rate to be 40 per thousand and the death-rate to be 12·7.

There have been no epidemics, unless grippe comes under that heading. A few died of consumption, which claims victims from the younger portion of the tribe. How far that insidious disease has made inroads amongst them is not apparent.

The old time 'teepee' or lodge, with its open top and thorough ventilation, is still in use in the summer season, and no doubt is conducive to sound lungs and

healthfulness. Longevity is a remarkable feature as showing great vitality amongst them. A further examination of the statistics will show that of the 392 as many as 41 are over 65 years. After the winter was over, the usual raking up and burning of rubbish was done. Cleanliness is by no means a common custom; but among the younger portion there is considerable care taken as to appearances. Some few of the women keep their houses as clean and tidy as any one would wish. Again there are others who do not.

Occupations and Resources.—Great interest is manifested by all the Sioux in agricultural work. Not that all are equally industrious, but agriculture is going on everywhere, and the Sioux partake of the general interest, and a little more, in the universal employment. The particulars of this industry and others as followed by the bands will be found in the agricultural and industrial statistics forwarded under separate cover with this report.

There are resources at hand in the Oak River reserve not as yet made use of but already referred to in the topography, that is the boulders, gravel and building sand. The time now cannot be far distant when such resources will be turned to account.

Education.—Progress in education has been very slow, and not at all commensurate with the efforts put forth by the department or by the church. The day school which has been in existence for years under the auspices of the Church of England and which has been flickering along with little hopes of brightening up to a cheering light has at length collapsed, purely from lack of attendance on the part of the pupils. Out of forty-six children of school age six only are attending any of the department boarding schools. The children on all the reserves seem very bright and capable in what they undertake to learn.

Characteristics and Progress.—With few exceptions, the Sioux are a very industrious people, with a lively and fertile imagination, and are full of inventive resources. However, notwithstanding this, the material progress during the past year, through no fault of their own, was nil. The hay crop was a very valuable asset; but the late spring, the short summer, together with early frost, were the means of the cereal crop losing one-half its value. This meant a good deal to them all. Trapping and fishing were a success, and as, fortunately, prices of furs were good, there was no suffering from want on any of the reserves.

Temperance and Morality.—Occasionally there is a break made in the line of intemperance, when a number will break out for a short time, and there will be an epidemic of drunkenness. But generally the Sioux are temperate, and law-abiding, and in their own way, are a religious people. Sometimes, perhaps, from our point of view they are a little lax on the marriage question; but a transfer of a good horse will quickly and quietly settle a disagreement or damages and set things running again as before. However, there is a great advancement made, even on the marriage question. More: there can be no question as to the religious life of a good number of Sioux, for they live it, as well as profess Christianity; and a good tree is known by its fruit. I should state also that there is on each reserve of Oak River, and Oak Lake, a Church of England missionary and a Presbyterian missionary, respectively, working faithfully and successfully for the material and spiritual welfare of the Sioux.

What seems so satisfactory and Christian about them is that there is no line drawn in their work between Christian and pagan. Sufficient that the sick Indian needs help, and the needful help is forthcoming, be he pagan or Christian.

A great need just now on each reserve, is a good church building that would be inviting to each band to visit and listen to the words that might open up a new world of light and life to them.

I have, &c.,

J. HOLLIES,

Acting Indian Agent.

PROVINCE OF MANITOBA,
LAKE MANITOBA INSPECTORATE,
PORTAGE LA PRAIRIE,
March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to submit herewith my annual report upon Indian affairs in this inspectorate for the year ended March 31, 1908.

The inspectorate includes four agencies, namely: Portage la Prairie, Birtle, Manitopawah, and the Pas, with a total population at the last annuity payments of 3,815 annuitant Indians and 470 Sioux. As I was only appointed to this inspectorate in September last, I have not yet visited the Manitopawah or Pas agencies, and consequently cannot report thereon.

PORTAGE LA PRAIRIE AGENCY.

This agency comprises five reserves.

Roseau River reserve is situated at the confluence of the Roseau and Red rivers, and has an area of about 5,670 acres. The reserve is well adapted for both grain-growing and stock-raising. The soil is rich and there is a good supply of hay.

Roseau Rapids reserve is situated on the Roseau river about 18 miles from its mouth. Its area is about 2,080 acres, and it is well adapted for grain-growing.

Long Plain reserve is situated about 15 miles southwest of Portage la Prairie on the north side of the Assiniboine river, in township 10, range 8, west of the first meridian. It has an area of 10,816 acres, with some good farming land and plenty of wood.

Swan Lake reserve is situated on the north side of Swan lake in township 5, range 11, west of the principal meridian, and contains 6,754 acres. It is adapted for grain-growing, but there is considerable shale close to the surface in places, and the whole district is subject to frost. There is plenty of hay on the reserve and good water.

Indian Gardens reserve is situated near the south bank of the Assiniboine river. It comprises section 11, township 9, range 9, west of the first meridian, and contains 640 acres. The soil is first-class for grain-growing, but there is no wood and very little hay.

Tribe.—The Indians in this agency are all of the Ojibbewa tribe, but there are a great many of them half and quarter breeds.

Population.—The population of the different bands is as follows: Roseau, including the Rapids, 181; Long Plain, 121; Swan Lake, including Indian Gardens, 109; making a grand total of 411.

Health and Sanitation.—The health of the Indians this year has been very fair, no epidemics have prevailed, although there have been many cases of grippe, which is particularly hard on the children. The winter has been mild, and many of the Indians did not move into their houses until December, and were back in their tents again in March. This is the best form of sanitation for Indians. Their roaming habits secure them the benefits of a fresh camp ground every few days, which prevents the accumulation of dirt and filth, and a perfect supply of fresh air all the time.

Occupations.—On the two Roseau reserves, grain-growing and stock-raising are both carried on in a half-hearted way, but all these Indians can get work with the settlers at good wages whenever they want to, and the result is that they hurry their own crop in a slipshod fashion, so they can go and earn some cash working for others. Since they surrendered and sold part of their reserve, these Indians appear to have

become more shiftless than before. Many of them have an idea they should never have to work any more and the money received for the land would keep them for the rest of their lives, and they spend a lot of their time waiting to be helped. Last season's crop was a failure on account of frost and a late spring, but from present appearances, the prospects are much better this year.

On the Swan Lake reserve both grain-growing and stock-raising are carried on, but the Indians take little, if any, interest in their cattle, and prefer to put their efforts into farming. As there is a permanent farm instructor there, the farming operations are developing on more methodical lines, and the prospects are encouraging. But the whole district has always been troubled more or less with summer frost. These Indians surrendered a part of their reserve and got their first payment on account, and I am glad to say they bought a number of horses and implements, consequently there should be quite an advance in their farming operations this year.

At the Indian Gardens reserve grain-growing only is carried on, and, although it is a beautiful section of land, the Indians will not take the trouble to cultivate it properly, and the result is that the land is getting very weedy. These Indians earn a good living working for the settlers.

On the Long Plain reserve there are only four or five Indians who are doing any farming. The rest of the band earn their living working for the settlers, and make a little by trapping, fishing, picking senega-root and berries. They will not pay any attention to advice, but never seem to be hard-up, and can always find money to buy liquor and pay police court fines.

Buildings.—All the houses and stables have log walls, many of them have the pole and mud roof, but I am pleased to be able to say that the lumber roofs and floors are becoming quite numerous. I prefer the log walls to lumber for Indians, because every fall and spring they can be given a fresh coat of mud or plaster and then whitewashed, which does away with the vermin that is sure to collect there. The log stables with poles and hay on top may not look very handsome, but they answer perfectly the purpose for which they are intended.

Stock.—The Indians of this agency do not take much interest in cattle, and, if they had their own way, would soon get rid of them. Unless there is a permanent farm instructor on the reserve to urge them on, they will not provide sufficient fodder, and, when a long winter comes, they lose in one season what it may have taken them five or six to raise.

Implements.—The farming Indians are all well supplied with tools and implements. They will buy anything to save labour.

Education.—There is a day school at the Roseau Rapids, in charge of Miss Rose Gordon, that is making very fair progress. There is another day school at the Swan Lake reserve, in charge of Miss McIlwaine, who boards some of the scholars in her own house; and we have a boarding school at Portage la Prairie, which receives a grant for twenty-five pupils and is always full.

Progress.—It is contrary to the Indian nature to advance on civilized lines, and progress must be made by constant pressure and urging, consequently it is very slow.

Temperance and Morality.—There is considerable intemperance in this agency, and where there is intemperance amongst Indians, there is sure to be immorality. The Indian will drink anything that will intoxicate him, and there is no lack of people ready and willing to sell to him, so long as he has the price. The Indians screen those from whom they obtain the liquor, and it is seldom they can be induced to give any information. Under these circumstances, it can easily be understood how difficult it is for officials of the department to get a conviction or suppress the traffic.

BIRTLE AGENCY.

This agency consists of the following reserves: Bird Tail (Sioux), Way-way-see-cappo's, Keeseekoowenin's, Rolling River, Gambler's, and a small fishing reserve at Clearwater lake.

I visited the agency in March, 1908, and as the ground was then covered with snow, I was unable to see their fields, but I made house-to-house visits on all the reserves, and thus saw all the Indians that were at home and their surroundings.

I first visited the Bird Tail Sioux, and found the old men of this band were showing a splendid example in farming to the younger generation. I was struck with the disposition of these Sioux. They were cheerful, seemed pleased to see me, received advice cheerfully, were glad to show me their stables, horses, cattle, and everything they had. Their live stock was all in good condition, although the quality was poor. There are only nineteen men in this band, but they cultivated over 700 acres of grain, and with an average crop would make a good living, but they cannot be induced to do much fall ploughing. They are well supplied with implements, tools, buggies, cutters, and democrats. Last season has been pretty hard on them, as the spring was late and their crops were frozen before they ripened. This band of Sioux are nearly all Christianized and attend the Presbyterian church on the reserve.

I next visited Way-way-see-cappo's reserve, a Saulteaux band; and the contrast was very noticeable. They are unprogressive, morose, and unwilling to be guided by advice from officials. Their inordinate pride appears to be the greatest obstacle to their advancement. They resent and ignore advice, and although they have owned and handled horses all their lives, and for many years have had cattle, they will not give them the care they require, and a heavy percentage die from ill usage and neglect. The women here, as on nearly every reserve, are a hindrance to the advancement of the men. No sooner do the men earn some money than the women want to go and visit their relations at some other reserve, or else give a feast or dance to their friends. The women in my experience, are all more backward in picking up advanced methods of housekeeping, such as cooking, washing, clothes-making, baking bread, and providing the ordinary comforts of a house, than the men are at their work, and the majority of them are discontented, dirty, lazy, and slovenly. The men here earn considerable by trapping and hunting, and can get all the work they want at good wages with the farmers in the district. They also sell dry wood in the various railway towns, consequently there is little or no destitution. The houses are all of log and a few have shingle roofs, but the majority are the little log shack of early days. This is a good reserve with fine soil, plenty of timber for building and large hay meadows. They cultivate about 250 acres.

While on this reserve I visited the tent hospital that has been in operation here since October, 1906. There are two large tents and one small one, also a log house, stable, and ice-house. The tents are heated with wood stoves and have been occupied all winter, and from the look of the ten patients I saw there, they are getting everything they desire; heat, good food, cleanliness, and plenty of fresh air. The patients all attend and see operations, and they now look upon an operation as an interesting event. I think seeing the operations has corrected their ideas of any superstitious treatment they had been imbued with from their own medicine men. They have attended 145 cases since the hospital opened, and had 22 operations for tubercular glands, all successful. The Indians appear to have confidence in the hospital treatment, as the most intense old pagans on the surrounding reserves are now sending their children to be operated upon.

I next visited Keeseekoowenin's band, and found the majority of them are an advanced type of half-breed, independent, and progressive. Their houses were all log with lumber roofs and floors, some of them two stories high and nicely furnished. The houses and stables of Joseph Boyer and George Bone are as comfortable as any half-breed's in the country. The stables of Joseph Boyer are a splendid example of how complete and comfortable a log stable can be made with an axe and an auger. In the houses on the reserve, I saw oilcloth on the floor, many framed pictures, patent flatirons, skates, cream-separators, sewing-machines, and all have good cook-stoves. The people are clean and healthy-looking, their houses showed care and comfort, and

as a band they are progressive. Their horses and cattle are all in good condition and they had plenty of hay. The reserve is a very rough one, although the soil is rich. Being in the valley of the Little Saskatchewan river, it is intersected with many large ravines and the land is all covered with brush, scrub, and timber. Joseph Boyer is the missionary for the band, and I am inclined to think, it is to his efforts that much of the advancement can be credited.

I then visited the Rolling River reserve, which is covered with timber and very rough. The Indians are of the Saulteaux tribe, are independent in manner, progressive, and earn a good living by hunting, trapping, fishing, labour outside the reserve, and the returns from their farming operations. Their horses and cattle were all fat, and they have plenty of hay. They cultivate about 200 acres of grain. Their houses were small and fairly clean. The Indians were warmly clothed, and looked healthy, cheerful, and had no complaints.

The Sioux Indians on the Oak River and Oak Lake reserves are in charge of Acting Indian Agent J. Hollies. The population is 270. On these two reserves they have nearly 3,000 acres under cultivation, and last season had 24,587 bushels of wheat, and 10,000 bushels of oats. They are all full-blooded Indians, and are the best workers I ever saw on an Indian reserve. They never had the pauperizing influence of a ration-house or government assistance. It was simply a case of working out their own salvation, and they are doing it. They are certainly a credit to themselves and to the whole Sioux tribe.

I have, &c.,

S. SWINFORD,

Inspector of Indian Agencies.

MANITOBA SUPERINTENDENCY,
LAKE WINNIPEG AND KENORA INSPECTORATE,
STONEWALL, MAN., March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my fourth annual report of the state of Indian affairs in the inspectorate placed under my supervision.

There are five agencies within the bounds of my district described as follows: Clandeboye, Norway House, Savanne, Kenora, and Fort Frances.

Clandeboye agency is wholly within the province of Manitoba and embraces the three rivers, Red river, Brokenhead river and Winnipeg river, all flowing into Lake Winnipeg.

Norway House agency takes in both the east and west sides of Lake Winnipeg, touches the mouth of the Saskatchewan river, and runs down the valley of the Nelson river a distance of about 80 miles into the Northwest Territories, or more specifically the district of Keewatin. It also extends from the mouth of the Berens river southeastward a distance of 200 miles to Pekangekum, in New Ontario.

Savanne agency is situated on the main line of the Canadian Pacific railway, commencing at Savanne not far from Port Arthur, and reaching westward to Wabigoon and Eagle lake, and northward to Lac Seul, in the province of Ontario.

Kenora agency is for the most part situate on the Lake of the Woods, Shoal lake, and adjacent waters also in western Ontario.

Fort Frances agency is found along the Rainy river, Rainy lake, the Seine river and southeasterly to Sturgeon river and Kawawiagamak.

This large area necessitates a great deal of travel by rail, steamer, teams, dog trains, and canoes, in all weathers, involves a considerable expense, and means unceasing activity; but with all that, we have not succeeded in reaching every point in the inspectorate. The spirit was not unwilling and the flesh was not too weak, but the limitations of time and money made it impossible to exercise complete supervision.

CLANDEBOYE AGENCY.

There have been three reserves in this agency, viz.: St. Peters, adjacent to the town of Selkirk, Brokenhead river, adjoining the municipality of that name, and Fort Alexander, near the mouth of the Winnipeg river.

The Indians on these reserves are for the most part members of the great Ojibway tribe, and speak what is commonly known as the Chippewa language, also called Saulteaux. It is in reality a dialect of the original language of the Ojibways of the Lake Huron and Lake Superior districts. A few Crees have come into the circle by intermarriages, but their language is seldom heard and their influence is small.

The nature of these people is hard. They are inured to pain, to pleasure prone. Their manners are coarse, social relations strained, ambitions low, morals lax, and religion colourless.

Their methods of procuring a livelihood are in a somewhat transitional state. Accustomed to the excitements and profits of the chase both by inheritance and long practice, they now find that every year lessens the number of fur-bearing animals and renders a hunter's life increasingly precarious. The younger men turn their attention to other and more modern methods of earning wages, but the seniors do not so well fit into prevailing conditions, and may be seen at street corners, standing idly by, while the procession representing progress and civilization moves on. Some have made a considerable success at fishing, at steamboating, in the manufacture of lumber, in cutting railroad ties, or in guiding parties in search of information, and at the close of the season come back to their homes with very substantial cheques in their pockets. Prudence in the use of this hard-earned money would place them and their families in comfortable circumstances, but care for the future is an unacquired virtue, and too often their money is wasted in riotous living, and in a few days they are down to the level of beggary and dissipation.

One seldom sees, even in this wonderful West, better wheat-growing land than can be found in this agency; but it is painfully true that no considerable use is made of it. Planted in the very nature of these Indians is a positive aversion to anything and everything agricultural. A few of the more advanced and energetic will raise a few bushels of potatoes. A much smaller number will sow small fields of oats or barley; but the great majority seem disposed to engage in anything else than tilling the soil. There is too protracted a space between seed-time and harvest for them.

The commission, referred to in last report, appointed to inquire into the ownership of St. Peter's lands and settle the disputes which had existed for over twenty years, met at Selkirk on March 11, 1907, and continued its sessions from time to time until September 23. On that date Mr. Frank Pedley, Deputy Superintendent General of Indian Affairs, visited the reserve and discussed with the band the question of surrendering the reserve to the department. Thre was a great deal of argument heard. Some were favourable and others held out strenuously for continuing existing conditions, but on September 24 a vote was taken, and St. Peter's reserve was formally surrendered by a majority of nine.

After the vote was taken the minority seemed to agree that, all things considered, the best conclusion had been reached and that the terms offered were liberal and quite in the interest of the band as a whole.

Next followed the selection of a new reserve on Lake Winnipeg. Six of the Indians went out at the expense of the department, guided by the writer, in the steamer *Chieftain*, and visited points that were supposed to be suitable. After much choosing, it was decided that no site offered as much advantage as Fisher River, and there they determined to settle if the consent of the department could be obtained.

This will settle for ever the long standing disputes and remove the St. Peter's people for a time from the adverse influences which have had such a corrupting influence over both young and old. Some of the better class will remain no doubt, but many will go, and let us hope that, with new surroundings and better chances of success, there may come about an era of activity, sobriety and prosperity such as the best friends of the tribe have long desired.

NORWAY HOUSE AGENCY.

This agency is composed of thirteen different reserves. Twelve are occupied, but one, Loon Straits reserve, is not at present inhabited.

The headquarters of this agency are at Norway House in the district of Keewatin, where comfortable buildings have been erected in the spacious grounds immediately adjacent to the mission premises and close to the Indian village and boarding school.

The natives of this locality live by fishing and hunting, but the fur has been scarce this year, and the fishing has fallen off very greatly, so that the circumstances of the people have not been as prosperous as could be desired. Even the rabbits have disappeared, and many have suffered severely through lack of proper nourishment.

An epidemic of diphtheria has broken out on the Norway House reserve. Fortunately a doctor had been sent out there last fall, and his presence and skill relieved the situation very much and no doubt saved many lives. Among those who have died was the chief of the band, Albert Sinclair. He was not a very old man, but for years he had been in failing health and death was the result of natural causes.

Fisher River continues to be the most progressive reserve in the agency. The number of cattle and horses has considerably increased and more land has been broken up than ever before. The class of buildings erected here excels anything on Lake Winnipeg and the people are intelligent and thrifty; yet even here we found a shortage of hay which it was necessary to supply in order to save the cattle alive. The department came to the rescue and those who received help were very grateful.

This agency is the home of schools and churches. The department supports 11 day schools and 1 boarding school. There are 10 churches or meeting-houses where the gospel is preached. The natives are all more or less favourably disposed towards Christianity, and not a few are devout members of the various denominations engaged in missionary enterprise.

There has been a good deal of sickness at Berens River, and fifteen deaths have occurred since last report. No special want has been reported this year.

The amount of $300 has been divided *pro rata* amongst the people of Hollow-water River, being part of the price paid for the burnt timber mentioned in last year's report. This came at a time when great need prevailed and the action of the department in sending it was very much appreciated.

A special journey was made to Split Lake, which lies to the north of this agency some 200 miles. The people there are prepared to adhere to Treaty No. 5 and are looking for their first treaty money during the coming June.

Jackhead reserve has suffered heavily from want of food, owing to the unusually limited supply of fish obtained during the winter. It was necessary for the department to come to the relief of this band.

SAVANNE AGENCY.

The Indians here have many sources of income, such as working in lumber camps, doing construction work on new railway lines, assisting in saw-mill work, hunting, fishing and steamboating. In summer-time they pick berries, dig roots, and gather rice, so that through the most of the year remunerative employment can be had. Considerable improvement has been recorded this year. The Indians are more prosperous, more provident, more temperate, and more law-abiding than formerly.

Considerable complaints about liquor have been sent in from Eagle Lake; but, owing to the distance of the agent and the absence of sworn testimony, it has been difficult to prosecute or to prove charges.

Notwithstanding the fact that there has been slight sickness, no serious epidemic has visited the agency during the year.

The natives of this locality are distinctly pagan and have little sympathy with religious teaching. They are given to roaming from place to place. A few of them plant some potatoes and cultivate small gardens.

KENORA AGENCY.

There are eleven bands in the Kenora agency living on the Lake of the Woods, Shoal lake, and the Winnipeg river.

I found that the question of intoxicants was a most serious one on this ground and one for which we have very little remedy. Those who have sold to the Indians have been vigorously prosecuted and heavily fined; but the punishments have not destroyed the traffic, indeed they have hardly checked it. Indians also have been heavily fined and imprisoned, but the next temptation finds them willing to risk the chances of a further assessment. For the protection of these people some radical measures must be adopted and the sooner the better.

During last winter the steamer *Redwing,* formerly used on Lake Winnipeg, was sent to Kenora and placed under the care of Agent McKenzie, and with this vessel at his command it is believed that a more thorough supervision will be exercised and much of the illicit traffic in liquor will disappear. Formerly while the agent was hiring a crew for his canoes, word was privately sent ahead and the guilty parties escaped; but now he can outdistance the canoemen, and surprises will be in order.

Cultivation of the soil is not much in evidence in this agency. The people are pagans of the most conservative and exclusive type. They have no desire to conform to the ways of the white man, the time-honoured customs of their fathers are good enough for them. They love ease and comfort and will only bring their energies into exercise when the necessities of life demand action.

There are large belts of valuable timber on several of the reserves of this agency, and traces of rare mineral wealth are found here and there. The soil is very rich where soil is found, but there is much rock and swamp land covered only with stunted trees. Hay-land is not plentiful and as a necessary result the cattle-raising industry is not extensively developed.

FORT FRANCES AGENCY.

This agency is made up of fourteen bands dwelling on Rainy river, Rainy lake, or streams tributary to them reaching away to the eastward.

The special reason which accounts for the undue activity in the liquor traffic here is the proximity of our reserves to the American boundary line. Unfortunately the laws of the state bordering upon Canadian territory will not punish offenders who sell to Indians residing on our side of the line. Natives are, therefore, sure of obtaining all they can pay for by crossing over into the United States. This is easily smuggled into Canadian territory and becomes the ruin of every virtue.

Plenty of remunerative labour offers to all these people, but they are not disposed to work heavily or continuously even for the very best wages. Employers find that they cannot be relied upon and have almost ceased to regard them as a desirable class of servants, except in the capacity of canoemen and forest guides. A few are taken on board the steamers as pilots over unknown waters, and render good service for a time; but a short spell on duty is usually followed by dissipation and folly.

The old site long occupied by the agency at Pither's Point is now a very valuable asset of the department, which must become necessary to the railway company now constructing a line through it, and there is hardly a doubt that it will be purchased for a station and townsite in the near future. It is said that trains will be running over the new line in the early summer.

The agent has been very successful this year in his prosecutions of liquor-dealers, and is deserving of special mention on this account.

An interpreter has been permanently employed by the department this year, and has been found to give most efficient assistance to the agent in all cases where his services are required.

GENERAL REMARKS.

I cannot speak too highly of the helpful and restraining influences originated by the churches and ministers of the gospel operating within this inspectorate. They set up high ideals, preach elevating doctrines, denounce wrong-doing, and emphasize and exemplify righteous living, and the results are eminently uplifting and purifying. They are a source of inspiration to the Indian. Society would be intolerable without them.

The red man must not be judged by standards designed to measure a white man. He is quite another being. By his inheritance, his training, his associations, his education, his methods of life, he is made essentially different from ourselves. Our strong points may be his weak ones and we may flatter ourselves and despise him; but this will not prove that he is without his virtues or that he cannot rise to the attainment of higher things. Canadians are not likely to forget that the extinguishment of the old Indian title in the Great Northwest has never cost a drop of blood or that in every rebellion which has marked our later history the Indian has been our loyal ally and friend. All that he asks in return is our strong, true friendship and wise assistance, and out of conditions which we are inclined to despise he will yet rise to fuller knowledge and nobler conduct.

I have, &c.,
JOHN SEMMENS,
Inspector of Indian Agencies.

MANITOBA SUPERINTENDENCY,
MEDICAL REPORT FOR KENORA AND SAVANNE AGENCIES,
KENORA, ONT., April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to report that during the year ended March 31, 1908, I attended all the Indians in this district who required medical attendance. I visited all the reserves, attended all the sick and also performed several surgical operations. I had to amputate one Indian's arm because of a gun-shot wound, and also operated on another Indian for the same cause, who was sent to me from Osingburg. In

December last I visited Shoal Lake boarding school, where an epidemic of cerebro-spinal meningitis broke out and three children died in three days. There were no more cases among them, and, as I did not know the cause of the epidemic, I discharged all the children from the school and sent them home, as it was the best thing I could do to separate them. I remained with them four days. The school has been opened again.

During the winter there had been a great many cases of measles among them, with several deaths, caused by taking cold. There have been the usual number of cases of grippe, but with no fatal results.

I attended two cases of retention of the after-birth after child-birth, with one death. This was caused by their not sending for me until it was too late. The cases are unusual among the Indians.

Scrofula, which was so bad in my district a few years ago, is fast disappearing under treatment. There have been no deaths caused by consumption in this district this year.

The deaths that occurred were among the old people and young children who have been neglected and improperly attended.

I visited the boarding school at Kenora several times. There was one death at this school last summer from acute meningitis.

All who required vaccination have been attended to.

The Indians in this district have fairly good health at the present time, and seem to be prosperous and contented.

I have, &c.,
THOS. HANSON, M.D.,
Medical Officer.

PROVINCE OF SASKATCHEWAN,
ASSINIBOINE AGENCY,
SINTALUTA, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report, together with a statistical statement of all government property under my charge, for the year ended March 31, 1908.

ASSINIBOINE BAND, NO. 76.

Reserve.—This reserve is a block of land 8 by 9 miles in extent, south of Sintaluta village, on the Canadian Pacific railway main line, about 9 miles from Sintaluta station.

This reserve is composed of rolling land, about half of its area being covered with small poplar, interspersed with willow scrub, the other portion being open prairie.

Resources.—The natural resources of this reserve are hay, dry wood, small fruits and senega-root. These Indians have marketed a large quantity of hay and wood during the year, with good returns. By this means they were able to provide food and clothing for their families.

Occupations.—The majority of these Indians are engaged in grain farming and stock-raising. Some hire as labourers for settlers. Others are employed tanning hides; while a few are engaged in hunting and trapping during the winter months. On the whole these Indians take a real interest in their occupations.

Characteristics and Progress.—The grain crops on this reserve were not so good as usual. The cold, wet, backward season kept the grain growing too long. A heavy frost came in August, doing great damage to the crop, making it a partial failure.

Some of the Indians, having made additional efforts to increase the acreage of their fields, were much discouraged by the poor return in the fall for their work during the year. They have newly broken more than 100 acres of land, which is now ready for crop. They are now making preparations for seeding.

Stock.—The cattle on this reserve are in good condition. They are being well cared for by the Indians. The natural increase has been good. The Indians have benefited from their cattle throughout the year.

Health.—A few Indians are suffering from scrofula, an odd one from tuberculosis, but on the whole these Indians are in good health. There have not been any epidemics of any serious disease during the year. They have given some little attention to the keeping of their houses tidy and clean, likewise to sanitation.

Temperance and Morality.—The larger number of these Indians are not given in any way to the use of intoxicating liquor. There has been only one case of drunkenness brought before me during the year. Throughout the band there has been a high standard of morality. Most of the band live regular and moral lives. There have not been any serious crimes amongst them.

Education.—There are a number of children of school age on this reserve, but the parents do not care to send them away to schools at a distance, such as Qu'Appelle and Regina schools, for family reasons. For this reason few children enter these schools from this reserve, and there are no other convenient schools to which they may send their children.

General Remarks.—The pupils returning from the industrial schools usually begin farming in preference to other occupations sooner or later. Those who have begun on this reserve are making rapid advancement in farming. The aggregate acreage of grain sown by these Indians has increased from two to three-fold during the past three years. They threshed about 6,300 bushels of inferior grain last fall. The number of Indians taking up farming is yearly increasing.

A few of the old people are still dependent on rations; some are destitute and others feeble. They are much indebted to the department for help in the way of clothing. They have much difficulty in getting food, as game has been very scarce.

There have been two deaths among the old people; these were from old age. The band as a whole has increased by one. Dr. Bouju, of Sintaluta, is the medical attendant, and is called when necessary.

MOOSEJAW SIOUX.

Position.—The Moosejaw Sioux are non-treaty Indians without a reserve, inhabiting the country from Moosejaw to the boundary.

Population.—The population of this band is estimated to be 115 persons.

Occupations.—These Sioux work as farm-labourers for the settlers in the neighbourhood of Moosejaw. Some of these Indians work for the townspeople of Moosejaw. Their wives do tanning, along with odd jobs about the town. Others almost wholly depend upon hunting for a living.

Abode.—They live in tents throughout the year and pitch camp wherever night overtakes them.

Stock.—The Sioux were unable to realize much money on the sale of their ponies during the year.

Education.—From their peculiar position, the Sioux have acquired enough English to make themselves understood. They seem to be prejudiced against sending their children to school.

Progress.—The Sioux of necessity have learned to shift for themselves. A few of the old people had to be helped with rations during the early part of this winter.

Health.—There have been several cases of small-pox amongst these Indians during the summer. The band has increased by two this year.

Drs. Turnbull and McCullagh are in medical attendance on these Indians.

I have, &c.,

W. S. GRANT,

Indian Agent.

PROVINCE OF SASKATCHEWAN,
BATTLEFORD AGENCY,
BATTLEFORD, April 29, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the affairs of the Battleford agency for the fiscal year ended March 31, 1908.

This agency comprises eight reserves, situated at distances of from 14 to 144 miles from the town of Battleford.

The buildings of the agency headquarters are conveniently, and centrally, located on the south side of the Battle river, about two miles south of the town.

RED PHEASANT BAND.

Reserve.—This reserve consists of 24,320 acres, and is located 22 miles southeast from Battleford, in the Eagle hills.

Population.—At the last payments, the population of this band was 159 souls.

Tribe.—The Indians of this band are Crees.

Occupations.—General farming and stock-raising are the main occupations of this band; although they make quite a lot of additional money by freighting, working for settlers; and by the sale of hay and fire-wood. Hunting is practically a thing of the past; with the exception of a few muskrats, and an odd mink now and again, there is no game left in this district.

The resources of this reserve are excellent, the soil being a rich loam; hay is abundant; water is plentiful, in small lakes, all over the reserve. The wood is becoming scarcer each year; this is on account of devastation by prairie fires.

The yield of grain last year was extremely poor, most of it being destroyed by frost.

Stock.—The cattle on these reserves are in fine condition, and are well cared for; they are stabled in the winter months, and get an abundance of water and hay; the calves are also strong and healthy.

Buildings.—Quite a number of these Indians have good log houses, which have shingled roofs, are partitioned off into rooms, and have sleeping quarters upstairs; and the good example of these young men appears to have stimulated the ambitions of some of the others, who are gradually falling into line, and improving their own dwellings. A good deal of comfort is also being added to their homes in the way of furniture, and more windows, which gives an appearance of cheerfulness and comfort to their rooms, which was totally unknown to them in former years, when they lived in tumbledown shacks, with mud floors and mud roofs, and about one pane of glass.

Farm Implements.—The members of this band are well equipped with all necessary farm implements and machinery, to which they are adding as they require them.

Education.—The day school on this reserve (Anglican) has a fair attendance; and the progress is very satisfactory; the teacher, Mrs. Jefferson, has a long experience at this work; and not only inculcates knowledge into their minds, but also, by precept and example, teaches them thriftiness and cleanliness.

Characteristics and Progress.—These Indians are advancing steadily; they are industrious and law-abiding; they are also decidedly better off than they were formerly; and are becoming more like white folk in their mode of living.

Temperance and Morality.—These Indians are moral and temperate; there were two or three convictions obtained for intoxication during the year; but severe punishment was, in every case, meted out to the delinquents.

SWEET GRASS BAND.

Tribe.—These Indians all belong to the Cree tribe.

Reserve.—This reserve has an area of 42,528 acres, and is located on the south side of Battle river, 20 miles west of Battleford. The land is well adapted for raising all kinds of grain, and for the grazing of stock. There is a fair quantity of timber on this reserve, and a good supply of water.

Population.—At the last payments this band had a membership of 76.

Occupations.—Nearly all the Indians on this reserve farm and keep stock; they also sell hay, fire-wood and a little lime, work for settlers, and freight to the railroads.

Buildings.—All the dwellings and stables are made of logs, with pole and sod roofs; two men shingled their houses last fall; and now some of the others are talking of doing the same. The houses are kept clean and neat.

Stock.—The stock on this reserve is of very good quality; it wintered well, and is in splendid condition.

Farm Implements.—These Indians possess all the farm implements that they at present need, and they are particular in their care and use of them.

Education.—There are no schools on this reserve; but ample educational facilities are provided for these children in the industrial and boarding schools of the agency.

Characteristics and Progress.—I consider that these Indians are progressing surely, although slowly, towards independence; they make a good comfortable living, are becoming more thrifty and have a very wholesome respect for the law.

Temperance and Morality.—The morals of these people are fairly good; and cases of intemperance are rare; when they do occur, they receive such a lesson that they seldom repeat the offence.

POUNDMAKER AND LITTLE PINE BANDS.

Tribe.—The members of both these bands belong to the Cree tribe.

Reserves.—There are two reserves here, which adjoin one another; they are situated on the south side of Battle river, about 40 miles west of Battleford, and about 9 miles south of the Canadian Northern railway, at Paynton. The combined area is 35,200 acres, the main part of which is excellent agricultural land; the remainder being well suited for grazing purposes.

Wood and water are plentiful. Of hay there is only a limited quantity, and it is difficult to get enough for the large amount of stock owned by these Indians; formerly there was a plentiful supply of hay on the adjoining unsettled lands; but now the settlement is completed right up to the borders of the reservation; last year there was little or no hay on Little Pine reserve; and the Poundmaker band helped them out by sharing up their hay with them.

Population.—The combined population of these two bands, at the last payments, was 229 souls.

Occupations.—These people are very successful farmers and stock-raisers ; they also do quite a lot of work for settlers, and freighting for the railroads, sell fire-wood at Paynton; altogther they make a very good livelihood.

Buildings.—The buildings are all of log, a few of them have shingle roofs, but the majority are covered with poles and thatch. The houses are kept clean and comfortable ; each year an improvement is noticeable as the Indians are striving to emulate the homes of their white neighbours.

Stock.—Cattle-raising among these bands is successfully carried on; they also have some sheep and pigs. The cattle wintered well and are in fine condition.

A much better class of horses is now being raised, thanks to the department's policy of helping them with good stallions.

These men take very good care of all their stock, and now that we have a first-class farmer on these reserves, I look forward to a much better state of prosperity than exists at present.

Farm Implements.—These Indians own a very complete outfit of farm implements and machinery, the major part of which has been purchased with their own money. They are quite competent both to use and care for their machinery.

Education.—There is a day school on Poundmaker reserve conducted under the auspices of the Roman Catholic Church, and also a day school on Little Pine reserve managed by the Church of England. The attendance at both these schools is fair, and I am glad to say that the progress attained is much more satisfactory than formerly was the case, both teachers being thoroughly interested in their work.

Characteristics and Progress.—These Indians are industrious, and they have made marked progress in farming, in all its branches, during the last few years; they make a comfortable living, and are contented and law-abiding.

Temperance and Morality.—These bands are a very moral people; they are also temperate, although, with regard to some of them, I am inclined to think that it is not so much a matter of choice as it is fear of detection and the punishment that they know will surely follow.

STONY BANDS.

Tribe.—These Indians are Stonies or Assiniboines. There is hardly any doubt that at some remote period they were closely allied to the Sioux, as they yet retain a number of their old traditions and a similarity of language.

Reserve.—There are two reserves at this point which are jointly occupied by Mosquito, Grizzly Bear Head and Lean Man bands. They are about 14 miles south of Battleford. These reserves contain 31,808 acres. They are made up of high rolling country, partially wooded with poplar, balm of Gilead and willow. There are stretches of open prairie containing a rich black loam, well adapted for cultivation, but also liable to summer frost. On other portions where the surface is undulating, and in the hollows and flats around the larger lakes there are excellent hay grounds, and large tracts are well adapted for grazing and stock-raising.

Population.—There were 76 Indians in these bands at the last payments.

Occupations.—These people make their living by the sale of hay and fire-wood; they do a little farming, in a very desultory manner, and raise a few head of cattle.

Buildings.—Their houses and stables are of a very poor description, being built of logs, with mud roofs; the only saving point about them is that they are white-washed every year; not much improvement is noticeable in their houses.

Stock.—The stock industry does not thrive on this reserve the way it should do; the Indians display a great want of interest in the welfare of their cattle; the only apparent reason for which is that they think that the cattle are there for the purpose of being killed and converted into food whenever they want it; and, if they cannot do this, they appear not to care much about their cattle. The cattle all came through the winter in good condition.

Farm Implements.—These Indians have all the farm implements they require and they own them, these having been purchased out of the proceeds realized from the sale of land, cattle, beef, &c.

Education.—There is a day school on this reserve conducted under the auspices of the Church of England; the attendance is small, and the progress fair.

Characteristics and Progress.—While the great majority of these Indians are indolent and difficult to incite to labour, some of the younger men are beginning to display a desire to better their condition; but if they remain trammelled by the old men who are content to follow the old ways and customs, it will necessarily take some time before any material change for the better may be expected.

Temperance and Morality.—These people are very temperate; and I have heard no complaints about any immorality against any of the members of the band.

MOOSOMIN BAND.

Tribe.—The majority of this band are Crees; but there are also a few Saulteaux scattered amongst them, who have from time to time joined the band or intermarried with some of the members.

Reserve.—Moosomin reserve is 12 miles west of Battleford; it contains 14,720 acres. This land lies between the Battle and Saskatchewan rivers; the country is rolling and partially wooded with bluffs of poplar, which I am sorry to say are gradually being thinned out every year by fires. The soil is a sandy loam, and is well adapted for both agricultural purposes and stock-raising. Water is plentifully distributed all over the reserve. There is also a hay reserve, for both Moosomin and Thunderchild bands, of 1,280 acres, at Round hill, 20 miles northeast of Battleford.

Population.—There were 130 people in this band at the last payments.

Occupations.—These men are all farmers and stock-raisers; they also sell hay and fire-wood; do quite a lot of freighting for the railways, work for the settlers; and make a very comfortable livelihood.

Buildings.—Some have fair houses and are comfortable; they are all built of logs, a few of them are shingled, but the most of them are roofed over with poles and covered with sods, or thatched. These Indians are each year accumulating more furniture in their homes, and making them more comfortable and healthy.

Stock.—The cattle are all in fine condition, and came through the winter well; they are a good grade, and are well taken care of.

Farm Implements.—A full complement of farm implements is owned by the members of this band; they also take very good care of them, both in the handling and storing of them.

Education.—There is no day school on this reserve, but the industrial and boarding schools provide ample accommodation and educational facilities for all the children of this band.

Characteristics and Progress.—These people are industrious, and are thriving fairly well, although living so close to town, where they come in contact with some unscrupulous whites and half-breeds, which, I consider, is quite a disadvantage to them, as they are easily led astray, and it has a very demoralizing effect on them, which is hard to eradicate.

Temperance and Morality.—Taken as a whole, the members of this band are a temperate and moral people; but, on account of the reasons stated in the preceding paragraph, they are often thrown in the way of temptation; and after all they are but human and occasionally fall; but it is an extremely difficult matter, in their case, to get enough evidence to convict them; and they certainly are experts at covering up their tracks; although everything possible is done to keep them in the right path, towards civilization and independence.

THUNDERCHILD BAND.

Tribe.—This band is composed mostly of Crees; there are, however, a few Saulteaux interspersed among them, who have joined them by marriage, or on account of having close relatives already in the band.

Population.—There were 117 people paid in this band at the last payments.

Reserve.—The Thunderchild reserve adjoins that of Moosomin, and is 18 miles west of Battleford. It comprises 15,360 acres on the south side of the North Saskatchewan river, and 5,440 acres on the north side of the same river; in addition to this, these Indians have a share of the hay reserve at Round hill. The land is rolling prairie, of black loam, with scattered bluffs of poplar and willow. The Saskatchewan and Battle rivers, also some lakes, provide the water-supply, which is very ample. The reserve is very suitable for mixed farming and stock-raising.

Occupations.—The principal occupation of this band is farming and the raising of stock; they also sell a lot of fire-wood, work for settlers and freight for the railroads, and in the winter-time some of them do a litle fishing in the lakes north of here. These people make a very comfortable living.

Buildings.—The buildings are all composed of logs ; they are not models of elegance, but are warm and comfortable; nearly all of them have pole and sod roofs.

Stock.—The cattle are all in prime condition, and came through the winter without loss; they are well cared for.

Farm Implements.—These Indians have a very good equipment of farm implements; they have been purchased with their own money, and they look well after them.

Education.—There is a day school here, which is conducted under the auspices of the Church of England; the attendance is small, but has improved during the last half year, and also some advancement has been made in the studies, and appearance of the children; this is due to the teacher, Miss E. M. Cave, who has taken great interest in her work.

There is also a boarding school, immediately adjoining this reserve; it is under the management of the Roman Catholic Church, and is conducted by the Sisters of the Assumption. This school was enlarged last year; it has now accommodation for forty children, and, as soon as this number is authorized by the department, the children can be secured to fill it.

It would be difficult to find an Indian school that is giving such thorough satisfaction as this one; the children are making splendid advancement with all their studies and work, both of which are of a very practical nature; so that, when these children leave school, they will be prepared to take their places on the reserves, ready to grapple with the problem of making a living for themselves.

The children all look clean, healthy and contented, and both the Reverend Sisters and the department are to be congratulated upon the success being achieved.

Characteristics and Progress.—The men of this band are good workers and manage to provide a good living for themselves and their families ; they are making a little progress every year and are becoming more thrifty.

Temperance and Morality.—These Indians are very temperate; or, to be more correct, I should say that they are total abstainers, and only two cases of immorality came to my notice during the past year.

KOPWAYAWAKENUM BAND.

Tribe.—These Indians are Crees.

Reserve.—This reserve is situated on the northern shore of Meadow lake, 144 miles north of Battleford, and has an area of 8,960 acres. Meadow river, along which there is some fine timber, flows through the reserve, crossing the eastern boundary four times. Meadow lake is about 7 miles long by 2½ miles wide.

This reserve is an exceptionally good one for Indians, there being an abundance of fish, excellent soil, plenty of timber and good water. The country around Meadow lake is principally prairie, with poplar bluffs; the soil is deep and heavy, and the herbage luxuriant. There is also a large area of surrounding country, which at the present time is unsettled, and provides a fairly good hunting ground for these Indians.

Population.—The population of this band was 88 souls at the last payments.

Occupations.—The members of this band have not yet commenced farming, in earnest, although this year they are putting in a small quantity of oats and a little barley; their stock is increasing slowly and will soon become a factor in their means of making a livelihood; their main energies at present are turned towards trapping, fishing and the pursuit of large game, all of which, combined, secure for them a living.

Buildings.—The dwelling-houses and stables are all built of logs; they are not much occupied excepting during the winter months; they are warm, clean and comfortable.

Farm Implements.—The implements owned by this band are very few, but they are sufficient for their present needs and are well cared for.

Education.—The day school on this reserve is still in operation; the attendance is small, and the progress moderate.

Characteristics and Progress.—They have some good gardens on the reserve, but, as they are principally engaged in trapping, fishing and hunting, they naturally take more pleasure and gain from this mode of life; although they are not losing sight of the future possibilities of their stock and grain-growing. They are industrious and well-behaved, and are anxious to improve their condition.

Temperance and Morality.—The Indians of this band are both temperate and moral.

GENERAL REMARKS.

Population.—The total population of this agency, at the last payments, was 875 souls ; as near as it is able to be ascertained, the births during the past fiscal year were 40 and the deaths 22.

Health and Sanitation.—There has been no infectious disease amongst them during the past year; this remark applies to the eight bands of this agency; taken as a whole they have enjoyed remarkably good health; I attribute this to their keeping their dwellings and premises in a cleaner and healthier state than formerly, living better lives, being more comfortably clothed and having more wholesome food. Their houses are whitewashed every spring or fall.

Stock.—Our stock industry has much improved during the past year; we had a very mild winter and the cattle came through in splendid condition, with practically no loss. On account of the thoroughbred bulls and the excellent class of stallions provided by the department, the quality of the stock has very much improved.

Progress.—I am very glad to say that these Indians are making real advancement towards becoming self-supporting; and what advantage they have already gained along this line, they have held; there are of course some of the genuine Indian type left yet, and these people are impossible to advance beyond a point where their nature and prejudice become a bar to further progress, and they have a bad influence on the younger men, which is difficult to overcome.

Last season was a very poor one for farming; we had excessive rains during the summer, and also the frosts came too soon. The Indians, however, managed to provide a good living for themselves, and bought their flour. The real difficulty cropped up in the spring, when it became a question of providing seed-grain. The department's action in loaning them the seed, has surmounted this difficulty; and it is a very real

boon, which is much appreciated by the Indians. A first-class grist mill has been erected in Battleford, so that now there is every inducement for them to grow grain.

I have, &c.,

J. P. G. DAY,
Indian Agent.

PROVINCE OF SASKATCHEWAN,
CARLTON AGENCY,
MISTAWASIS, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report on this agency for the fiscal year ended March 31, 1908.

THE STURGEON LAKE BAND, RESERVE NO. 101.

Tribe or Nation.—These Indians are pure Wood Crees.

Reserve.—This reserve has an area comprising over 34 sections; it is situated 22 miles northwest of Prince Albert, and surrounds the Sturgeon lake. A portion of the reserve supports a large growth of spruce of superior quality, from which the sale of merchantable timber has placed a considerable sum to the credit of the band and created an interest account which supplies these Indians with useful implements and necessaries. A large quantity of arable land, well situated, is found to the south of the lake, sufficient for all the probable future needs of the band.

Population.—The population of the band is 150.

Health and Sanitation.—The general health of these Indians was good excepting during December and January. No epidemics of any kind visited the reserve during the year, and there were fewer deaths than usual.

Occupations.—There exist so many opportunities for employment at good wages outside of the reserve that farming operations are generally discredited. For some years, in fact, only oats have been raised. The acreage in crop showed an increase of 50 per cent over the season of 1906; but, the season being late and unfavourable, the yield was lighter, and the total crop threshed was slightly under that of the preceding season.

The demand for railway ties made from jack-pine to meet the needs of railway construction in this part of the province, led to a deal with a local tie contractor, and over 9,600 ties were got out by the Indians, the gross earnings from which amounted to $2,014 and furnished a winter's occupation to some twenty workers of the band.

Buildings.—Several comfortable dwellings were erected by the Indians during the year of a style superior to many of those built by surrounding settlers.

Stock.—The cattle owned by this band wintered well and reached during the summer the high-water mark in prices realized, 9 cents per lb. being obtained for the carcases delivered to the lumbering camps in the neighbourhood.

Implements.—The supply of implements is being steadily increased on this reserve, chiefly through purchases made with band moneys.

Education.—There is a fairly well attended day school on this reserve, for which the Church of England provides the management.

Characteristics and Progress.—These Indians are for the most part energetic workers and furnish some of the best axemen and log-drivers employed by the lum-

bering camps. They are practically self-supporting, as their interest account provides funds for the purchase of such implements and food-supplies as they require. Their facilities for farming are steadily increasing and I look for a marked advance under the active management of their farming instructor.

Temperance and Morality.—With the aid of dissolute half-breeds near Prince Albert this band is able to secure liquor at almost any time, and detection of the guilty outsiders is very difficult, as the Indian will rather go to jail than supply evidence as to his means of securing intoxicants. In spite, however, of the opportunities afforded by their proximity to the city and their distance from the agency, there is comparatively little drunkenness on the reserve. They are fairly moral.

PETEQUAKEY'S BAND, RESERVE NO. 102.

Tribe or Nation.—This band is composed chiefly of French and English half-breeds, about one-fourth being Plain Crees.

Reserve.—This reserve is situated about 20 miles west of Carlton on the Muskeg or Paddling lake. It comprises an area of 42 sections, one-third of which is wooded with poplar, spruce and tamarack, and the remainder (not under water) is divided between hay meadows, pasturage and sufficient farming land for all the future needs of the band.

Population.—The population of this band is 110.

Health and Sanitation.—With the exception of a few chronic disorders, the health of this band has been good during the year. Sanitary measures are generally understood and observed.

Occupations.—While their chief occupations are farming and stock-raising, they also derive a considerable income from hunting, root-digging, freighting and carpenter work for outside settlers.

Buildings.—Most of the Indian dwellings on this reserve are of a superior class and cleanly kept. The stables also are warmly built.

Stock.—The cattle and horses of this band were as usual this spring in the best condition of any in the agency. Three of the most progressive members of the band purchased towards the end of the year, with assistance, five heavy well-bred Clyde mares at an aggregate cost of $1,100. With care these animals will prove a source of considerable income to their owners.

Implements.—These Indians are becoming each year better equipped with implements and machinery.

Education.—The old day school on this reserve was in charge of the late Rev. Father Paquette, and, when the Duck Lake boarding school was established, he became its first principal and the school here was closed to furnish its foundation pupils. This reserve has continued a recruiting ground for the school.

Characteristics and Progress.—The Indians of this band are generally energetic and ambitious to succeed. The lateness of the season caused a shrinkage in the acreage under actual cultivation, but a large quantity of new land was broken up during the summer and a material advance will result next year.

Temperance and Morality.—No instance of intemperance or immorality was reported during the year.

MISTAWASIS BAND, RESERVE NO. 103.

Tribe or Nation.—These Indians are nearly pure Wood and Plain Crees, French and English half-breeds.

Reserve.—The reserve comprises 77 sections and is situated about 20 miles northwest of Carlton on the trail to Green Lake. It is well watered, has excellent pasturage, with a sufficient amount of arable choice land, and is admirably adapted for mixed farming.

Population.—The population of this band is 132.

Health and Sanitation.—With the exception of scrofulous disorders, the health of the band has been generally good during the year.

Occupations.—The chief support of these Indians is derived from farming and stock, with hunting, root-digging and freighting according to the season of the year and opportunity.

Buildings.—The homes of these Indians are well built log buildings with shingle roofs. Their stables are generally comfortable in winter.

Stock.—The cattle on this reserve came through the winter well. The only losses reported were of calves born during the winter.

Implements.—An increase in the number of working Indians has developed a shortage in the number of implements available for use.

Education.—An excellent day school, under the control of the Presbyterian Church, and taught by the resident missionary, supplies the education for the children of the band. To ensure a good attendance during the winter months, the children are boarded in an adjunct to the manse from Monday morning to Friday evening of each week, with much cheerfully borne inconvenience to the missionary's family.

Characteristics and Progress.—There are energetic working Indians on the reserve; but some of these are erratic and sporadic in their efforts. A quantity of new land was broken, however, during the summer, which will assist to increase the acreage under cultivation next season.

Temperance and Morality.—Liquor-drinking on this reserve is apparently decreasing, but the morality of the band is below par.

AHTAHKAKOOP'S BAND, RESERVE NO. 104.

Tribe or Nation.—These Indians are nearl pure Wood and Plain Crees.

Reserve.—This reserve commences about 34 miles northwest of Carlton and is situated on the Green Lake trail and along the Assissippi or Shell river. It covers an area of over 67 sections, is well wooded, well watered, contains a fair amount or extent of hay meadow, and sufficient arable land, varying from a light sandy soil to a heavy rich loam, to meet the probable future needs of the band. The surface is generally rolling and broken.

Population.—The present population of the band is 219.

Health and Sanitation.—The health of the band has been fair; during the year some deaths occurred, notably that of Councillor Waymequonowayo, from pneumonia, and there were some lingering illnesses, chiefly scrofulous.

Occupations.—The chief industries of the band are stock and grain raising; but hunting, root-digging and freighting contribute largely to their support.

Buildings.—The better class of Indians on this reserve are comfortably housed in buildings of a good type; but the less progressive, nomadic families of the band are content with mud-roofed shacks during the winter, from which they return to tents for the summer.

Stock.—The cattle here came through the winter with little loss, and a considerable increase to the herd is expected.

Implements.—There has been a slight increase in the number of implements in use by the band.

Education.—The education of the children is secured by means of a day school on the reserve in charge of the Church of England, supplemented by boarding and industrial schools at Prince Albert, Duck Lake and Regina for the older pupils.

Characteristics and Progress.—A large proportion of these Indians are energetic, industrious and independent in the management of their own affairs. Most of them are also good hunters, and, when game abounds, farming operations are interfered with by their preference for the chase. The unfavourable nature of the past season at its commencement caused a reduction in the area under crop. They are law-abiding and are perceptibly increasing in prosperity.

Temperance and Morality.—This band with the exception of a few individuals is moral and temperate.

KENEMOTAYOO'S BAND, RESERVE NO. 118.

Tribe or Nation.—These Indians are Wood Crees and are almost pure.

Reserve.—The southeast corner of the main reserve lies about 6 miles northwest of the northwest corner of the Sandy Lake reserve. It extends about 12 miles in a northwesterly direction, and contains little or no suitable farming land. To remedy this defect a small tract of about a section and a half of better land situated about midway between the main reserve and reserve No. 104 was granted this band during the year in exchange for an equal area surrendered from the southwest corner of the original reserve. The total area of these two tracts is about 46 sections.

Population.—The population of this band is 124.

Health and Sanitation.—The health of these Indians has been fairly good during the year, and they have obeyed any instructions given them as to sanitary measures and cleanliness around their dwellings.

Occupations.—Besides farming and stock-raising, a considerable support is obtained from hunting and fishing.

Buildings.—There are no Indian dwellings of the better class on this reserve. A quantity of lumber was, however, sawn by the agency mill during the summer from logs which the band had got out for the purpose, and an improvement in the character of their dwellings and buildings is anticipated.

Stock.—The stock of this band was somewhat reduced through the necessity which developed of slaughtering a number of young animals which had become affected by lump jaw.

Farm Implements.—The implements on this reserve have not been sufficient in number for the needs of the Indians nor have they been kept in as good repair as they should have been.

Education.—The attendance at the day school showed a slight improvement for a portion of the year, but the opposition and indifference of the pagan members of the band is difficult to overcome.

Characteristics and Progress.—Most of these Indians are law-abiding, and some of them very industrious. Their progress has, however, been slow, due largely to the inferior character of their reserve, which has never yet raised a good crop of grain. A commencement was made on the new addition to their reserve, and over thirty acres broken. If better results are obtained there, it will prove an encouragement to better efforts in the future.

Temperance and Morality.—These Indians are temperate, and fairly moral.

THE PELICAN LAKE BAND.

Tribe or Nation.—These Indians are pure Wood Crees.

General Remarks.—This hunting band numbered at last payments 63. They occupy the country to the north and east of reserve No. 118, and support themselves without assistance from the department excepting a small issue once a year of twine and ammunition under treaty stipulations, with some clothing to the aged and destitute. They share in the ownership of the Big River reserve.

THE MONTREAL LAKE NEW RESERVE, NO. 106A.

General Remarks.—The northern bands of this agency living in the neighbourhood of Montreal Lake and Lac la Ronge join in the ownership of this reserve, which has been set apart for any members of those bands who may desire to take up farm-

ing. Considerable distress having been occasioned recently through the scarcity of game at Montreal Lake, an exodus of a considerable number of the Indians of that band to this reserve is promised for the ensuing summer, subject to the approval and assistance of the department.

THE MONTREAL LAKE AND LAC LA RONGE BANDS.

These Indians, chiefly Wood Crees, showing a large admixture of sturdy white blood, and numbering in all 713 souls, by virtue of their different mode of life from childhood, canoeing their sole means of travel in summer, calling into play the muscles of chest, shoulders and arms; and snow-shoes and dog-train in winter to train the muscles of the legs, enjoy a more complete physical development and are consequently more robust than any other Indians of this agency.

Living almost entirely in the open air, they (especially those at Lac la Ronge, where abundance of game and fish is the rule) are peculiarly free from disease—their healthy, full-blooded and intelligent appearance is a tribute to the simple life.

A day school at Montreal Lake and a boarding school at Lac la Ronge, both ably managed under the auspices of the Church of England, are doing good work and are well attended.

WAHSPATON BAND, RESERVE NO. 94A.

Tribe or Nation.—These Indians are Sioux, formerly members, or their descendants, of Sitting Bull's band.

Reserve.—This reserve comprises about four sections, most of which is very light and sandy and can only support a limited number of residents. In view of this fact two other sections of better land in an adjoining township were temporarily withheld from settlement by outsiders to meet the possible requirements of this band. During the past summer these sections have been taken possession of by members formerly residing at Prince Albert and may now be included in the reserve.

Population.—There are now thirteen families in residence on this reserve.

Health and Sanitation.—These Indians are particularly cleanly in their habits. Those who escape consumption and scrofula are fairly robust, but the diseases named constantly claim their victims and have levied a fearful toll on this band.

Occupations.—The nearness of these Indians to the city of Prince Albert enables them to earn good wages by the delivery of cord-wood and hay, and the sale of roots and berries.

Buildings.—Their buildings are neat and clean; but one-roomed, sod-roofed and of less value than those of any other reserve.

Stock.—Their cattle and ponies are slowly increasing in numbers and are well cared for.

Farm Implements.—They have not many implements; but those they have are kept in good repair.

Education.—The day school is attended by all the children of school age on the reserve. It is taught by the resident missionary and is under the management of the Presbyterian Church.

Characteristics and Progress.—These Indians are particularly law-abiding and as a whole are the most energetic and industrious in the agency; some good fields have been prepared and houses built on the new sections to be added to the reserve.

Temperance and Morality.—This band continues to be the most temperate and moral in this agency.

GENERAL REMARKS.

My appointment as commissioner to treat with the more distant bands now included in Treaty No. 10, and to take evidence regarding applications for scrip from

the same region, required me to leave the agency in charge of the clerk, Mr. Jackson, during my absence, which commenced early in June. The season as a whole proved one of the most trying we have had. The spring opened so late that the Indians believed there was no chance of a ripened crop and the area under cultivation on the principal farming reserves was in consequence greatly reduced. A quantity of new land was, however, broken on each of the reserves during the summer, and I anticipate a marked advance next season throughout the agency.

Hay was harvested under great difficulties. For one spell of 30 days rain fell during some portion of each twenty-four hours so that no hay in coil or windrow dried sufficiently to stack during that period. A great deal was ruined; but the past winter was exceptionally mild, stock of all kinds was able to graze out until January, and half the usual allowance of fodder proved sufficient for their needs. The cattle on all the reserves were in excellent condition when turned out in the spring.

A new and most valuable form of assistance was introduced during the year by the department in the purchase and loan to ex-pupils of brood mares on easy terms of repayment. This must prove a great incentive to industry with the younger generatiin, on whom centre our hopes for the uplifting of the race.

I have, &c.,

THOS. BORTHWICK,

Indian Agent.

PROVINCE OF SASKATCHEWAN,
CROOKED LAKE AGENCY,
BROADVIEW P.O., May 27, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my fourth annual report of this agency for the year ended March 31, 1908, together with statistical statement, and inventory of government property in my charge.

Location of Agency.—The headquarters of the agency is located on the northwest quarter of section 4, township 18, range 5, west of the 2nd meridian, about 9 miles northwest of the town of Broadview, on the main line of the Canadian Pacific railway.

Reserves.—The Crooked Lake agency comprises Ochapowace reserve, No. 71; Kahkewistahaw, No. 72 and 72A; Cowessess, No. 73; Sakimay, No. 74 and 74A. These reserves are all located along the Qu'Appelle river, and are convenient to good market towns on the south and north. The total area is 120,895 acres, being a reduction since last report of 6,796 acres, surrendered for sale by Little Bone's band.

OCHAPOWACE BAND, NO. 71.

Reserve.—This reserve contains 52,864 acres.

Population.—The population of this band is 113.

Health and Sanitation.—During the year the health of these Indians has been normal. A few live in fairly comfortable houses, but generally their houses are small and unsanitary.

Occupations.—The members of this band who are engaged in farming seeded last year a substantial acreage; but, owing to early frosts, the results were most disappointing. Small herds of cattle are kept by these Indians, for which they provide well. Some hay is also put up for sale. Wood is a staple source of income.

Education.—The Indians of this band are very willing to send their children to school.

Characteristics and Progress.—Most of these Indians belong to a type difficult to break away from old customs; progress among them is consequently not very marked, although a few are making some advancement.

Temperance and Morality.—The Indians of this band in a general way are not much addicted to intoxicants, although a few are. The morals of the band are very fair indeed.

KAHKEWISTAHAW BAND, NOS. 72 AND 72A.

Reserve.—The reserve contains 13,535 acres and is situated north of Broadview.

Population.—The population of this band is 95.

Health and Sanitation.—These Indians have been free from unusual epidemics, but many of the families are diseased with scrofula. Marked improvement has been made in many of their houses, which should tend to better sanitation.

Occupations.—Most of the Indians who farm on this reserve were required to establish new places this year, their old holdings being within the surrendered area, considerable new land was broken, and new houses and stables erected. These Indians also keep cattle, for which they provide ample hay and have a surplus for sale.

Education.—Most of the children of this band who are of school age and physically fit, attend school.

Characteristics and Progress.—In my opinion the year under review has been one of some progress with this band, while the conditions are such that we cannot look for a great deal, yet further advance may be attained.

Temperance and Morality.—The standard of morality and habits of temperance in this band are not what could be desired, but improvement may be noted.

COWESSESS BAND, NO. 73.

Reserve.—The agency buildings are located on this reserve. The reserve contains 29,704 acres. The land is of choice quality, ample wood and water are available; hay is not so plentiful as on the other reserves.

Population.—This band has a population of 189.

Health and Sanitation.—The general health of these Indians has been good throughout the year. Their houses are usually neatly kept, and altogether the sanitary conditions are better than on the other reserves.

Occupations.—These Indians engage more generally in the industry of farming than those of the other bands, and some of them have all that pertains to a good farmstead, comprising implements, wagons, sleighs, horses, cattle, pigs and poultry. At certain seasons of the year some of the men work out, and earn considerable in wages.

Education.—There is no difficulty with this band regarding education, they desire to have their children educated, and as soon as they are of school age generally arrange to place them in a boarding school.

Characteristics and Progress.—In my opinion there is steady advance with this band, although in dealing with them we meet with many disappointments.

Temperance and Morality.—During the year the conduct of this band with regard both to temperance and morals has been remarkably good.

SAKIMAY AND LITTLE BONE BAND, NOS. 74 AND 74A.

Reserve.—The reserve of this band comprises 25,280 acres, the reserve at Leech Lake, No. 73A, 6,796 acres, having been surrendered for sale.

Population.—The population of this band is 147.

Health and Sanitation.—The Indians of this band have enjoyed normal health through the year; they, however, are not a healthy band, many of the families being scrofulous. A few of the houses are good log dwellings with shingled roofs, but most of them are small huts with sod covering, and are not sanitary.

Occupations.—The few Indians in this band who farm in a small way have heretofore not received satisfactory results, owing to inferior methods of farming. Improvement is noticeable. Many of them depend largely on their cattle. Wood, hay, senega-root, furs and fish, are sources of income to these Indians; a few work out for settlers and earn wages.

Education.—This band looks upon education with less favour than the other bands in this agency, although some children are in school, others who should be there, are not in school.

Progress.—These Indians cannot be regarded as making much progress, although I think they have a better appreciation of what is required and expected of them, and some advancement may be expected in a few cases.

Temperance and Morality.—Marked improvement in the habits and morals of these Indians may be noticed.

GENERAL REMARKS.

Progress.—In a general review of the work of this agency during the year, I regret that climatic conditions rendered the work of the Indians very disappointing in results; however, it is pleasing to report that they are not discouraged and their preparations for another year have been satisfactory. In the care of cattle they are steadily improving, and also in the way they do their field work there is decided advancement. A striking feature on all the reserves is the change in fencing; the old rail fence has almost entirely disappeared, and a wire one has taken its place, representing very considerable cost in money to the Indians.

Land Surrendered.—In July, Inspector Graham, representing the department, held a meeting of the survivors of Little Bone band, to take a surrender of their reserve, 6,796 acres, for sale. A majority of the Indians agreed to surrender, and at a subsequent meeting the Little Bone Indians were admitted as members of Sakimay band. When the land is sold, the proceeds will be funded for the united band.

Cattle.—Speaking generally, the Indians in this agency are getting more interested in their cattle each year; perhaps because they get more direct benefit from them. During the year they sold 108 head, besides which, 49 head were beefed for food.

Crops.—The result of the harvest in this agency was disappointing owing to an unusually late spring followed by a cold, wet growing season. The grain did not mature in time to escape the early frosts, consequently a great deal of the wheat crop was rendered worthless, and all of it was damaged, although some was of marketable quality, and fit for seed. Some very good oats were grown. Potatoes and roots were not a good crop.

Dwellings.—During the year 8 new dwelling-houses of a substantial type have been erected, viz.: Kahkewistahaw reserve, 6; Cowessess reserve, 1; Sakimay reserve, 1. These are all good log structures with frame gable, and shingled roofs, well lighted, and fitted with panel doors. Some debt for lumber has been incurred, which it is expected will be cleared off next year.

Sanitation.—The sanitary conditions on Indian reserves are necessarily primitive. The first principles of sanitation, namely, light and pure air, seem beyond their knowledge, the 'air-tight stove,' which has supplanted the old open chimney as a mode of heating, has closed an avenue to some measure of ventilation, which must be regarded as a distinct loss. Garbage is gathered up in the spring and burnt. Whitewash is freely used before going into the houses in the winter.

Temperance.—It is gratifying to report a general improvement in the temperate habits of these Indians during the year. Only 5 prosecutions for intemperance were recorded against 23 for the previous year; by bands the offenders were, Kahkewistahaw, 3; Sakimay, 2. In my opinion the habits of the Indians with regard to the use of intoxicants are regulated largely by the frequency or otherwise of their holding gatherings or dances. Indian dances or gatherings are undoubtedly demoralizing from every point of view, and should be strongly discouraged.

General Remarks.—Owing to partial crop failure, and a large falling off in the demand for fire-wood, which is a large source of income to these Indians, ready money has been scarce; the income from the sale of cattle has been very useful in addition to the wholesome food provided through their beef-supply. No destitute assistance was required except for the very old and infirm who are alone, and in a few cases of sickness.

Inspection.—Inspector Graham visited the agency several times this year.

Staff.—The members of the agency staff have been attentive to duty. Mr. H. Nichol, who has faithfully acted as clerk here for three years, is aoout to be transferred to Qu'Appelle agency as agent. The promotion is well merited. The farming instructors in their respective duties have been fairly successful.

Schools.—Cowessess (Roman Catholic) boarding school, situated in the valley of the Qu'Appelle near Crooked lake, is a very well conducted institution. The children under the principalship of the Rev. S. Perrault, O.M.I., and the thoughtful care of the Reverend Sisters of St. Joseph, are certainly well looked after. This school is worthy of every encouragement.

Round Lake (Presbyterian) boarding school, situated near the lake of that name, and just off Ochapowace reserve, provides an excellent training in the class-room. The pupils are neatly dressed, well nourished, and generally healthy. Scrofula is not tolerated here. The Rev. Hugh McKay, D.D., is the principal.

I have, &c.,

M. MILLAR,
Indian Agent.

PROVINCE OF SASKATCHEWAN,
DUCK LAKE AGENCY,
DUCK LAKE, April 25, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report for this agency, together with agricultural and industrial statistics and inventory of government property under my charge, for the year ended March 31, 1908.

ONE ARROW'S BAND, NO. 95.

Reserve.—The reserve of this band is located to the east of the south branch of the Saskatchewan river, 13 miles from the agency headquarters, and has an area of 16 square miles. It is considerably broken up with small lakes and sloughs. The soil is sandy and cannot be depended on during dry seasons.

Tribe.—The Indians of this band are Plain Crees.

Population.—The population of this band is 99.

Health and Sanitation.—The health of the Indians of this band during the past year was very good; during the summer they live in tents, in winter in log houses, which they keep clean.

Occupations.—The principal occupation of the band is hunting and trapping, supplemented by freighting and root-gathering; they own and take good care of a fine herd of cattle. From the sale of the beef animals they annually receive a good return for their labour. They also draw from the herd their winter supply of beef.

Education.—There is no day school on this reserve. The children of school age are sent to the Duck Lake boarding school.

OKEMASSIS AND BEARDY'S BANDS, NOS. 96 AND 97.

Reserves.—The reserves of these bands border chiefly on Duck lake and its hay marshes, being about 3 miles from the town of Duck Lake, which, having its flour-mill and good market, adds considerably to the advantages these bands have. The total area is 44 square miles. On Okemassis and part of Beardy's the soil is sandy and poor, but the remainder is very good on the south and west sides; these sections the Indians are now cultivating with favourable results.

Tribe.—These two bands are Plain Crees.

Population.—The population is 164.

Health and Sanitation.—The health of the Indians of these bands during the past year was good. They are very cleanly in their habits, showing that they understand and value sanitary measures.

Occupations.—The younger men on these reserves all farm, and that too with encouraging success. During the winter months they have always more or less hay to sell, so that from their crops, hay and surplus cattle they make a comfortable living. The older men do not farm to any extent, however, all of them that are able-bodied support themselves by hunting, trapping, gathering roots, freighting, &c.

Buildings.—The buildings of these reserves are not as good as one would like to see, the principal reason for this being that there is no wood on the reserves that can be turned into lumber; there is, however, a gradual improvement going on, and a few years should see them all with comfortable dwellings.

Stock.—A fine herd of stock is owned by the Indians of these reserves, which they value and take as good care of as any other class of men.

Farm Implements.—The farm implements on these reserves are up to date and sufficient for requirements. The Indians have a portable engine and threshing outfit, with which they do their own threshing, and do it well, without any assistance or oversight.

Education.—There is no day school on these reserves, the children of school age being sent either to the Duck Lake boarding or the Regina industrial school.

Characteristics and Progress.—The Indians of these reserves are industrious and law-abiding; they are year by year becoming better off.

Temperance and Morality.—They are temperate and moral.

JOHN SMITH'S BAND, NO. 99.

Reserve.—The reserve of this band lies on both sides of the Saskatchewan river, 14 miles from the city of Prince Albert, and comprises 37 square miles. The soil is all that could be desired, with plenty of sloughs and upland hay, also having a large quantity of poplar timber for building purposes.

Tribe.—This band consists of half-breeds and Swampy Crees.

Population.—The population of this band is 148.

Health and Sanitation.—The health of this band during the past year was good. They all own good log shingle-roofed houses, in which they live all the year round. They quite understand the value of and attend to the necessary sanitary measures.

Occupations.—The occupations of the band are various. The younger men have not taken to farming, preferring in most cases to work off the reserve; some of them go to the lumber camps in winter, and log-driving in spring; others freight goods to the northern posts of the Hudson's Bay Company. The older men farm to some extent. In winter they hunt and trap, they also earn money by freighting.

Stock.—The Indians of this reserve own a considerable number of cattle, but for various reasons they are not increasing. The cows are milked, and they make and sell butter.

Farm Implements.—The farm implements are sufficient for requirements.

Education.—There is a day school on this reserve, at which the attendance is irregular, not because the children are at any time off the reserve, but rather, I think, from the indifference of their parents.

Characteristics and Progress.—The members of this band are half-breeds. They lack the push and ambition of the white man on the one hand, and on the other the honesty of purpose of the Indian. Protected by the government as Indians, they have failed to make the use of themselves that they would have done had they not entered treaty. They make a living, but further advancement will not under present conditions take place.

Temperance and Morality.—Many of the men of this band are addicted to the use of liquor, which they have little trouble in getting. While intemperance and immorality usually go together, it cannot be said of these people that they are immoral.

JAMES SMITH'S BAND, NO. 100.

Reserve.—This reserve is situated on the Saskatchewan river near Fort à la Corne, and contains a fraction over 56 square miles. There is a strip of it on the north side, where the land is poor and sandy; otherwise the soil on the rest is of very good quality, interspersed with small lakes, sloughs and hay meadows, but in all a splendid country.

Tribe.—These Indians are Plain and Swampy Crees.

Population.—The population of this band is 236.

Health and Sanitation.—While the general health of this band during the past year was good and no epidemic or contagious disease was prevalent, yet tuberculosis in its various forms still keeps a strong hold on them. This cannot be charged to a want of sanitary precautions, as they are a cleanly people, who live during the summer in tents and in winter in well constructed shingle-roofed log houses.

Occupations.—The principal occupation of this band is hunting and trapping. A number of the younger men farm, but the temptation of the hunt makes the success in this direction limited. The members of the band own a large herd of cattle, which on the whole are well taken care of.

Buildings.—Nearly all the Indians of this band own comfortable log dwellings, shingle-roofed, floored and in some cases plastered inside and divided into rooms.

Implements.—The reserve is well equipped with all the necessary farm implements.

Education.—There are two day schools on the reserve, both of which are well attended when the Indians are on the reserve. When the parents go hunting they take the children with them, so that it is quite common upon one visit to find as many as fifteen children in attendance at each school, while on the next visit one may find only two or three. This irregularity of attendance does not tend to the advancement of the children, and is apt to sap the interest of the teachers.

Characteristics and Progress.—I consider these Indians industrious in their own way; they find it easier to make a living by hunting and trapping than by farming, and so hunt and trap. They provide ample feed for their stock, but then their interest in hunting clashes with the interest in feeding their stock, and the latter sometimes suffers.

Temperance and Morality.—They are not addicted to the use of intoxicants, and are moral.

NUT LAKE BAND, NO. 90.

Reserve.—This reserve is situated in township 39, range 12, west of the 2nd meridian, and it comprises an area of 16·6 square miles. It is bounded on the west by the Nut lake, in which fish are caught. A portion of this reserve is covered with a growth of poplar and spruce; hay is abundant and the growth of grass and pea vine is luxuriant. The nearest railway point is Wadena on the Canadian Northern railway, some 40 miles south.

Tribe.—These Indians are Saulteaux.

Population.—The population of this band is 210.

Health and Sanitation.—The health of this band during the past year has been good. Except in the extreme cold of winter they live in tents. The tents are moved frequently, hence the sanitary conditions are good.

Occupations.—The Indians of this band live by hunting and trapping.

Characteristics and Progress.—The nature of the occupation of this band of Indians compels them to move about a great deal, so that they neither know nor value a good home. In the extreme cold of winter they live in mud-roofed shanties. They are not as yet over-cleanly in their habits, and it cannot be said that they are making progress. I have no doubt that when they make up their minds to settle down on their reserve, depend less on the product of the chase, and turn their attention to farming and stock-raising, their progress will be rapid.

KINISTINO BAND, NO. 91.

Reserve.—This reserve is situated in township 42, range 16, west of the 2nd meridian, and comprises an area of 15 square miles. The Barrier river runs through a portion of it, and the fish caught therein form a valuable source of food-supply for the Indians. The reserve is partly covered with white spruce and poplar of good merchantable quality, and there is sufficient good arable open land for the use of the band for farming purposes.

Tribe.—These Indians are Saulteaux.

Population.—The population of this band is 81.

Health and Sanitation.—The health of the Indians of this band during the past year was good. It cannot, however, yet be said that they realize the value of sanitary measures; but this, I expect, will be gradually acquired.

Occupations.—These Indians during winter depend for a living on hunting and trapping, and for the past few years have done very well. During the summer they work for neighbouring farmers.

Buildings.—The buildings with two or three exceptions, are mud-roofed shanties, which they occupy only in the extremely cold weather.

Stock.—They have a few head of cattle, of which they take reasonable care.

Farm Implements.—For what farming they have done or will do in the near future, they have sufficient implements.

Education.—They have no school, and so far the parents are averse to having a school on the reserve or sending their children to an industrial school.

Characteristics and Progress.—The members of this band are slowly working into the white man's ways. They are very independent and entirely self-supporting.

Temperance and Morality.—They are as temperate and moral as can be expected from their present conditions.

GENERAL REMARKS.

In common with all others depending upon farming in this country, this agency also suffered. Our crops were light and on some of the reserves badly frozen, added to this the almost total disappearance of fur made the winter a hard one for old and

young. Fortunately the winter was mild, and work of various kinds enabled all to pull through without any material assistance. The general health of the Indians during the year was good, and no epidemic visited the agency.

A very comfortable home for the farmer's use was completed on the Kinistino reserve, as well as stable and granary.

Abundance of hay having been put up along with a mild winter brought all of our cattle through in very good condition.

A pedigreed Clydesdale stallion was supplied last spring, from which I expect a great improvement in our horses will be noticeable in a few years.

I have, &c.,

J. MACARTHUR,

Indian Agent.

PROVINCE OF SASKATCHEWAN,
MOOSE MOUNTAIN AGENCY,
CARLYLE P.O., April 20, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on matters in connection with this agency, together with an inventory of government property under my charge, and copy of agricultural and industrial statistics.

Tribe or Nation.—This band—white Bear's band, No. 70—is an amalgamated band, made up partly of Cree, Assiniboine and Saulteaux Indians, and occupies the White Bear reserve.

Reserve.—This reserve is situated in the southeast corner of what is known as the Moose mountains, and lies about 6 miles north of the town of Carlyle on the Arcola and Regina branch of the Canadian Pacific railway. The agency buildings are very prettily situated about 9 miles northeast of Carlyle near what is known as the 'Heart hill,' the highest point on the range. The reserve contains 30,288 acres, a greater portion of which is covered with scrub and timber. A considerable portion of the reserve is covered with lakes, most of which are small, but there are several fairly large ones which are well stocked with excellent fish. The southern portion of the reserve is very hilly and rough and badly broken up with sloughs and small lakes. Consequently there is very little good arable or hay land in comparison with what is unfit for either purpose.

Population.—The population of this band is 198.

Health and Sanitation.—The health of the Indians of this band during the past year has been fairly good. We had an epidemic of whooping-cough at the beginning of the year, several cases proving fatal. Beyond that, a few cases of consumption and sore eyes have been about all we have had to contend with. Great effort has been made to prevail upon the Indians to keep their houses clean, and in a few cases with very little success.

Occupations.—Some of the Indians are farming in a small way, and are learning how to handle farm machinery for themselves; but they still require a good deal of looking after. Quite a number are keeping cattle in an entirely Indian fashion, although I must say that I see some improvement along both lines. Those not engaged in farming or stock-raising work out a little, hunt, trap, sell dry wood or willow pickets, tan hides and in fact do anything that they can get to do to keep themselves supplied with the necessaries of life and keep out of debt. For over a year and a half they have not been allowed to contract any fresh debts, and they are

living more comfortably than they ever did before. If they want a thing, they either go and sell something or do some work and then pay for what they get instead of coming to the agent for an 'order' on a store and getting what they want on the long chance of being able to pay for it in the dim future.

Buildings.—There are only 12 of the houses that were occupied three years ago in occupation as dwellings now, and with one exception the present buildings show a great improvement on the old ones in every way.

Stock.—The stock came through the winter in good condition with no losses, and I am looking for a good crop of calves.

Farm Implements.—We are fairly well supplied with farm implements, but would be the better of some more.

Education.—We have one day school under the auspices of the Presbyterian Church and taught by Miss E. May Armstrong, a lady of long experience and first-class ability and methods, and one who is making a good school out of pretty rough material. The parents of the school children in part of the band take a good deal of interest in the school, and send their children quite regularly. Others will require a certain amount of compulsion before they will send their children at all.

Characteristics and Progress.—The Indians on this reserve are not really industrious, yet they are becoming better off in spite of the fact that last year was the most disastrous, from a farming standpoint, that I have seen in nearly forty years in the west. They are law-abiding, none of them having been punished for any offence against the law during the last year and a half.

Temperance and Morality.—They are, as Indians go, a very temperate lot, still it does no harm to keep a sharp watch on them. As to their morals, I believe that they are as moral as it is possible to find a band of Indians of the same size anywhere in the Northwest. There certainly is no band where there is more earnest Christian work done to improve their morals than there is done by our missionary right here on this reserve.

Staff.—The staff for the past year consisted of myself and Mr. J. A. Stewart, farmer.

I have, &c.,
THOS. CORY,
Indian Agent.

PROVINCE OF SASKATCHEWAN,
ONION LAKE AGENCY,
ONION LAKE, April 20, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report on the affairs of this agency for the fiscal year ended March 31, 1908.

Six Indian reserves are contained in the Onion Lake agency: Seekaskootch, No. 119; Weemisticooseahwasis, No. 120; Ooneepowhayo, No. 121; Puskeeahkeewein, No. 122; Keeheewin, No. 123, and Chipewyan, No. 124.

ONION LAKE BAND, NOS. 119 AND 120.

Nation.—The Indians of the Onion Lake band belong to the Cree nation.

Reserves.—The reserves belonging to the two bands, which when embraced as one are known as the Onion Lake band, are called Seekaskootch and Weemisticooseahwasis,

taken from the names of two chiefs, now deceased. These two reserves adjoin one another, Weemisticooseahwasis lying to the west of Seekaskootch, the southern boundary of each being a continuous line, the eastern end being about 6 miles north, and the western end half a mile north, of the North Saskatchewan river. The fourth meridian passes through the western reserve, about one mile west of the line dividing it from the eastern.

The area of Seekaskootch reserve is 38,400 acres. The centre of the reserve lies low and is comparatively flat, in places affording good pasture, and containing some good hay marshes. The north and south portions are hilly and mostly wooded with poplar and pine, but to the northeast there are some patches of open country. The greater part of a small but picturesque lake, lies within the reserve on the southern boundary. The character of the soil is light, except at the foot of the hills to the north, where there are some patches of richer land.

Weemisticooseahwasis reserve contains an area of 14,080 acres, embracing several good hay marshes and numerous poplar groves. The general character of the soil is light.

Population.—The population of Seekaskootch band is 326, and of Weemisticooseahwasis band, 91.

Health and Sanitation.—The general health of these Indians has been very good throughout the year; during the first part of the winter, small-pox broke out on Weemisticooseahwasis reserve, but by proper attention and isolation of cases, it was confined to three families; no deaths, however, occurred from the outbreak. A fatal case of diphtheria occurred during the early part of the year, on Seekaskootch reserve, but the disease was confined to one household. Every member of the band requiring vaccination, has been vaccinated, excepting a very few who absolutely refused. At the beginning of spring, there is a general cleaning up around all the dwellings, and the filth accumulated during the winter is burnt; and in the fall, when the houses are being made tight and wind-proof for the winter, the majority of them are lime whitewashed inside and out.

Occupations.—When spring opens, those who still follow the hunt set out trapping and shooting rats, the pelt of which animal has within the last four years risen from seven cents each to one dollar for three. Others, mostly of the younger generation, are engaged on their little fields, ploughing and seeding; but as the soil is light, they are encouraged to confine their attention in the farming industry to the cultivation of oats and barley, in preference to wheat. The district is more adapted for stock-raising and to this industry their attention is chiefly directed. During the haymaking season they are kept busy providing sufficient hay for the winter, the bulk of which is hauled in the winter-time. There are few, however, who do not participate in the hunt more or less at some season of the year. As the country becomes settled, there is more opportunity for the Indians getting employment. Hitherto, what freighting they did was for the Hudson's Bay Company and other traders; now, however, they are not infrequently engaged in cutting and hauling logs and rails for settlers.

Buildings.—The dwelling-houses owned by these Indians are built of logs, and, though they are small, are made warm and comfortable for winter; few of them are inhabited in summer, the Indians being happier and in better health under canvas in the warmer weather. Four houses are much superior to the others, being two storeyed and having shingled roofs. The stables have been in better order this winter than they have been for some time, and the shelter has been much improved by the addition of sheds.

Stock.—Stock-raising is a profitable industry with these Indians, inasmuch as the most thrifty of them are deriving their own beef, and much of their support in general, from their stock.

Farm Implements.—These Indians are well provided with farm implements, most of which they have purchased out of the proceeds of beef or cattle.

Education.—There are two boarding schools on the Onion Lake reserve, one under the auspices of the Roman Catholic Church, and the other under those of the Church

of England, both of which are taken advantage of by the Indians; indeed, the attendance at the former school has attained the maximum, and it appears as though provision will have to be made for an increased number of pupils. Indians are very changeable in their disposition regarding schools; at present they are pretty well united in admitting the advantage of having their children educated, but there are times when it is difficult to keep parents from taking their children away from the schools. The progress made by the pupils at both schools, is satisfactory.

Characteristics and Progress.—As a community these Indians agree very well among themselves, and cause very little trouble in regard to the breaking of laws. Indolence is an Indian failing, but there are a number who may be now called industrious, and the fact that less government assistance is annually required for these Indians, shows that they are advancing towards self-support.

Temperance and Morality.—There has been more trouble caused by liquor during the past year than in any previous year, on account of increased facilities for getting it; precautions are taken to prevent the Indians obtaining whisky, but at times they get possession of it. Morally, I cannot say they are improving.

FROG LAKE BAND, NOS. 121 AND 122.

Nation.—The occupants of these reserves are all Crees.

Reserves.—Ooneepowhayo reserve, No. 121, and Puskeeahkeewein's reserve, No. 122, adjoin one another; the northern boundary of the former, and a portion of the western, forming a part of the boundary of the latter. Both reserves extend the full length of the western shore of Frog lake, and a few miles to the north and south of it. Both bands together are generally known as Frog Lake band.

Ooneepowhayo reserve contains an area of 21,120 acres. The soil throughout is sandy loam. The surface to the south and east is very uneven and wooded with poplar, excepting a few open pieces toward the south. The eastern portion is more open, but contains a good deal of willow scrub and some poplar groves. There is good pasture for cattle and some small hay sloughs, where in favourable seasons good hay can be cut, but not in quantities sufficient to winter the cattle owned by the Indians; they are obliged to go outside the limits of the reserve to get all the hay they require.

The are of Puskeeahkeewein's reserve is 25,600 acres. Thl soie is chiefly sandy loam. A considerable portion is overgrown with willow where the soil is peaty, and in the open parts of the willow bush a good deal of hay can be cut in dry seasons. The north and northwestern extremities are wooded with poplar and pine.

Population.—The population of Ooneepowhayo band is 103, and of Puskeeahkeewein's, 26.

Health and Sanitation.—The health of these bands has been fairly good throughout the year; no epidemic has visited that part of the country. An improvement is noticeable in the cleanliness of some of the people, and of their houses, while three houses I could mention show no improvement. As on other reserves, a general cleaning up round the houses takes place as the snow begins to disappear. All the people of this band have been vaccinated.

Occupations.—Most of the people derive the great part of their living from hunting. Cattle-raising is, with difficulty, followed to a small extent, the hindrance being lack of hay; the Indians generally manage to get enough to bring the cattle through the winter, but have to cover a large area of ground and travel far in order to do so. They are indolent with regard to farming, only one family makes any success of it, and then only in a very small way.

Buildings.—The houses are built of logs, and are well chinked and mudded every fall to make them warm and wind-proof for the winter; but, as usual with most of the Indians, they do not occupy their houses in summer, finding it healthier and more convenient in many ways to live under canvas.

Stock.—Their cattle are of first-class stock and are increasing.

Farm Implements.—They are well supplied with mowers and rakes, and have ploughs and harrows sufficient for their requirements.

Education.—One boy is at the St. Joseph's industrial school, Davisburg, and two boys and one girl are at the Onion Lake Roman Catholic boarding school. The parents of these children quite willingly allow their children to be at school, but there are others who cannot be persuaded to send their children. There is no school on the reserve, the nearest being either of the boarding schools at Onion Lake.

Characteristics and Progress.—These Indians are law-abiding and seldom have any trouble amongst themselves; are not progressive, but are not becoming poorer.

Temperance and Morality.—I have no reason to believe that there is any liquor traffic going on among these Indians; but the laws of morality are not properly observed.

KEEHEEWIN BAND, NO. 123.

Nation.—The members of this band belong to the Cree nation.

Reserve.—Keeheewin reserve is situated about 30 miles northwest of the southern end of Frog lake, and contains an area of 18,016 acres. It is well adapted for cattle-raising, as it contains some splendid pieces of pasture as well as sloughs, where in a moderately dry season abundance of hay can be cut, and in wet seasons the upland hay is good and plentiful. There are numerous poplar groves, and the southern portion is thickly timbered with poplar and pine. The soil is mostly of a rich sandy loam, and there are a few places suitable for farming, were it not that early frosts are general.

Population.—At last census the population of this band was 145.

Health and Sanitation.—An epidemic of small-pox broke out on the reserve and among the neighbouring settlement of half-breeds at Moose Lake, from which very few families escaped; but fortunately no deaths occurred. The matter was handled in a masterly way by the department, assisted by the Royal Northwest Mounted Police in seeing that the quarantine established was properly observed. Medical aid was provided by the department for the sufferers, and particular attention was given to the disinfecting of the houses and any valuable articles owned by the Indians. Nearly all their clothing was burned and replaced, all at a considerable expense to the department. Quarantine was raised on March 11. At the outbreak of the epidemic, there was some difficulty in getting the Indians to keep quarantine; but after they saw for themselves the very infectious nature of the disease, there was but little trouble. All those that required it were vaccinated. With the exception of this epidemic, the health of this band has been very good. It is rather surprising that they should be the Indians to suffer, because they are the most cleanly in their habits and housekeeping of all the bands comprised in the agency.

Occupations.—The industry chiefly pursued by these Indians is cattle-raising, in which they are fairly successful; the natural conditions of their reserve are certainly much in their favour. They are, however, a people to look out for work and take advantage of every opportunity of getting freighting, helping settlers to build houses, and any such work that comes in their way. The country round the reserve is fairly good for hunting, a pursuit which at times is not unprofitably followed by most of them.

Buildings.—The houses occupied by these Indians, though small, are well built of logs with pole and mud roofs; with two exceptions they are clean and well kept, and in winter are warm and comfortable. When the warm weather comes, they are quickly vacated for tents, which the Indians find more healthy and comfortable. The stables were made comfortable for the winter, but more shelter in the form of sheds is required, and these the Indians have promised to erect by next winter.

Stock.—The cattle on this reserve are of a very good grade, and are well looked after during the winter.

Farm Implements.—These Indians are well supplied with mowers, rakes, wagons and sleighs, and what they at present require in the way of ploughs and harrows.

Education.—There are no schools on this reserve, but seven children of the band are at the Roman Catholic boarding school at Onion Lake.

Characteristics and Progress.—The Indians living on this reserve are not indolent, and are almost entirely dependent upon their own exertions. Cattle-raising is the industry chiefly followed, and some of the younger men get employment working and freighting for surveyors and for traders who frequently pass through the district. Not far from the reserve a good French settlement is springing up, which in some respects will be an advantage to these Indians. Settlers have a good deal to learn from the Indians, in return for which the Indians become acquainted with the usages of the whites. These Indians are law-abiding, and are gradually becoming better off.

Temperance and Morality.—I do not know that any of these Indians are addicted to the use of liquor, and so far as other moral conduct is concerned, they rank among the better class.

CHIPEWYAN BAND, NO. 124.

Tribe.—These Indians are nearly all of the Chipewyan tribe, except where by intermarriage a few Crees come in.

Reserve.—Their reserve is situated from 40 to 45 miles north of the agency headquarters, and about 6 miles southwest of Cold lake.

Population.—The population of this band is 273.

Health and Sanitation.—The general health of these Indians has not improved, lung and stomach troubles being the most common. During the small-pox epidemic, all that could be, were vaccinated. One of the earliest cases of the epidemic occurred in this band, but the house was immediately quarantined and the disease confined to one household ; fortunately no deaths occurred. The rubbish and filth which collects round the houses in winter, is burnt in the spring, but the Indians are slow to take advice with regard to sanitation generally.

Occupations.—These Indians procure their livelihood chiefly by hunting and trapping, and by freighting and other work for the settlers and traders. The past winter, however, has been unpropitious for hunting, and as a consequence they have not been able to provide for themselves as usual. Some have cattle, but cannot devote sufficient attention to them to make the undertaking profitable.

Buildings.—The houses are made of logs and are well built, showing as a rule better workmanship than those of the Crees. Their horse stables, in some cases, are well kept, but the cattle stables do not receive so much attention.

Stock.—The cattle owned by the Chipewyans are of a low grade, and are not increasing.

Farm Implements.—Very little agriculture is carried on by these Indians and, for what they do, they have sufficient implements; for haymaking, they have mowers and rakes sufficient for requirements.

Characteristics and Progress.—As a people they are not progressive. They are good hunters, it is their business and pleasure, and in a bad hunting season they are depressed, and for food have to depend upon the fish that they draw from Cold lake and Goose lake, where some of them spend most of the winter.

Temperance and Morality.—Although these Indians are not altogether temperate, in other respects they are law-abiding and do not quarrel much among themselves. Otherwise their moral character is fairly good.

I have, &c.,

W. SIBBALD,

Indian Agent.

PROVINCE OF SASKATCHEWAN,
PAS AGENCY,
THE PAS, April 2, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908; also statistical statement and inventory of government property under my charge.

CHEMAWAWIN BAND.

Tribe or Nation.—The Indians of this band are of the Swampy Cree tribe.

Reserve.—This reserve is situated on the Saskatchewan river at the west end of Cedar lake, and has an area of 3,010·93 acres. It is well timbered and a quantity of hay can be cut; the soil is good, but the greater part is covered with limestone.

Population.—The band numbers 137 souls.

Health and Sanitation.—During the year this band suffered severely from an epidemic of measles, the greater part of the mortality being due to exposure during convalescence.

Occupations.—The members of this band live entirely by fishing and hunting. The fur-catch has been very poor this year; they, however, managed to catch enough fish for their wants and to sell some besides.

Buildings.—The houses on this reserve are in many cases too small and overcrowded, which in a measure is a fruitful cause of disease; although the Indians have been repeatedly advised of this both by the doctor and myself, they are too indolent to improve their homes.

Education.—There is a day school on this reserve, under the charge of Mr. Frank Barker, who takes great interest in his work, but the children are only making fair progress, owing to the parents being obliged to take them away on their hunting trips, having no means of leaving them behind.

Characteristics and Progress.—I am sorry to say that these Indians are not advancing in any respect, owing to their indolence and improvidence, which seems to be the inevitable condition of their mode of life, it being at best a game of chance.

Temperance.—The Indians of this band are temperate and of fair morals.

MOOSE LAKE BAND.

Tribe or Nation.—This band is of the Swampy Cree tribe.

Reserve.—The reserve is situated on the west side of Moose lake; a large island in the lake also forms part of the reserve, the total area of which, including a hay reserve, is 3,663 acres. This consists of timber, swamp and hay land; the soil is good but rocky.

Population.—This band numbers 119 souls.

Health and Sanitation.—A severe epidemic of measles resulted in the death of twelve members of this band. The houses are kept fairly tidy and the garbage is gathered in the spring and burned.

Occupations.—Fishing and hunting form the staple of their support, the fur catch was a good deal less than last year, but the fishing was very good. The Indians might have earned more than they did at this industry, but did not avail themselves of the advantage, catching only sufficient to do them from day to day.

Buildings.—The buildings on this reserve are fair, but should be better, as they have very good timber wherewith to build. The houses are whitewashed with lime.

Stock.—They have a few head of cattle, but do not seem to take any interest in acquiring more.

Education.—There is a day school on the reserve, but as the parents take their children with them when away hunting, the attendance is irregular.

Characteristics and Progress.—The Indians of this band do not seem anxious to exert themselves more than is absolutely necessary to secure a living, therefore it can be seen that permanent progress is impossible.

Temperance and Morality.—I have not heard of their obtaining any intoxicants; and their morals are up to the average.

PAS BAND.

Tribe or Nation.—This band is of the Swampy Cree tribe.

Reserve.—The reserve is situated partly on both sides of the Saskatchewan river, also at the mouth of the Carrot river. They have a timber reserve on the Carrot river and a fishing station on Clear Water lake, making a total of 7,610 acres. This is covered with small timber; the soil in places is good, but the larger part of the reserve is composed of muskeg and swampy land, where hay can be cut when not overflowed.

Population.—There are 410 souls in this band.

Health and Sanitation.—There has been a good deal of mortality in this band during the year caused by the after-effects of measles, and consumption. The resident medical officer, Dr. Larose, is in constant attendance, but the proper care and nourishment of the sick is not carried out by the Indians, who are apathetic to the former and cannot afford the latter; the recovery of the patient is therefore largely a matter of constitution.

Occupations.—During the winter the Indians hunt fur and fish for their own use, also for sale. This year the fur hunting has been very unsatisfactory, but the fishing has been good. During the summer they find work as boatmen. They have sawed about 60,000 feet of lumber at their mill and have now over 1,200 logs cut. A few cultivate small patches of potatoes.

Buildings.—A number of new houses have been built on the north side of the river by Indians who formerly occupied the present townsite. The houses are kept in fairly good order, and when possible are whitewashed. A number intend building new houses during the summer; at present there are several families living together, this they now see does not do and is the cause of a good deal of sickness.

Education.—There are two day schools on this reserve, one at the Pas and the other at the Big Eddy, 5 miles up the river. The attendance at both places is irregular on account of the lack of interest shown by the Indians in the education of their children, also on account of taking them away when hunting or fishing at distant lakes.

Characteristics and Progress.—The Indians are willing to hire out when they get a chance, but, beyond working on the York boats and cutting cord-wood, there is little to be made. They are a law-abiding community and of good manners, they are getting along as well as can be expected, taking into consideration the ways and means at their disposal.

Temperance and Morality.—I had occasion on the complaint of an Indian, to fine two white men who went on the reserve in a state of intoxication and offered liquor to some of the Indians, who, with the exception of one, refused to take any. On the aggregate, I have nothing to say against their morals.

SHOAL LAKE BAND.

Tribe or Nation.—The Indians of this band belong to the Swampy Cree tribe.

Reserve.—This reserve is situated on the Carrot river, and contains 2,237 acres.

The soil is good, and there is a quantity of fine spruce timber on it; a considerable amount of hay can be cut when not flooded.

Population.—The band numbers 73 souls.

Health and Sanitation.—With the exception of an epidemic of measles, the general health of this band has been good. Refuse is gathered up and burned, and the houses whitewashed as a sanitary precaution.

Occupations.—These Indians live by hunting and trapping; they also catch fish in the Carrot river; they grow a quantity of potatoes and nearly every spring bring some down to the Pas for sale; some have cattle and could keep many more, but so long as the fur hunt lasts, their ambition in this direction is limited to a few head.

Buildings.—The houses are good log buildings, and the new ones put up last year are an improvement on their former homes.

Stock.—The cattle were well wintered, the stables comfortable, and sufficient fodder was provided.

Education.—The children attending the day school on the reserve are doing well, notwithstanding the irregularity of the attendance, caused, as elsewhere, by their parents taking them away on their hunting trips.

Characteristics and Progress.—The Indians of this band are law-abiding, but not so industrious as they should be; with the exception of the old and sick, who get relief during the winter months, they manage to make a living.

Temperance and Morality.—They are temperate and moral.

RED EARTH BAND.

Tribe or Nation.—This band is a mixture of the Swampy Cree and Saulteaux tribes.

Reserve.—This reserve is situated on the Carrot river 15 miles from Shoal lake, and has an area of 2,040 acres. The soil is good clay. There is some hay-land, but little building timber on the reserve.

Population.—The band numbers 129 souls.

Health and Sanitation.—Although this band had several cases of measles, no deaths resulted from this cause; the general health has been very good.

Occupations.—They live by hunting, also grow a considerable quantity of potatoes, and have cattle and horses.

Buildings.—The buildings are a very fair lot, which they keep neat in appearance by a yearly application of whitewash; the stables are log buildings, well kept and comfortable.

Stock.—The cattle are well looked after and sufficient hay was provided for their use.

Education.—The day school on the reserve is well attended while the parents are at home, but as these people travel about a good deal, taking their children with them, the attendance is not regular; still there is an advancement to be noticed.

Characteristics and Progress.—The people are industrious, good hunters, and have, notwithstanding the scarcity of fur in this district, made a very fair hunt. Mr. Kennedy, the teacher, takes a good deal of interest in the people; he is a handy man and encourages them in building better houses and stables by giving them a helping hand; on the whole I am glad to say that this band is going ahead.

Temperance and Morality.—They are temperate and their morals are good.

CUMBERLAND BAND.

Tribe or Nation.—They belong to the Swampy Cree tribe.

Reserve.—The reserve is situated on Cumberland lake and has an area of 1,883·17 acres. The soil is of poor quality, stony, swampy and in parts covered with brush. There is a quantity of building timber available.

Population.—The band numbers 162 souls.

Health and Sanitation.—The general health of this band has been good, with the exception of an epidemic of measles, which, however, was not severe.

Occupations.—They are engaged mostly in hunting and fishing, they also earn considerable wages working for the Hudson's Bay Company and other traders.

Buildings.—As these people are away a good deal, they only use their houses when living on the reserve ; the buildings are small and not very well kept.

Education.—A new day school-house has been built on the reserve since my last report, and is a great improvement on the old one. Mr. Settee, the teacher, takes interest in his work, but the nomadic propensities of the people make the attendance irregular, and progress slow.

Characteristics and Progress.—The Indians are law-abiding, but their diligence in providing for the future does not extend further than their immediate necessities.

Temperance and Morality.—During the year an Indian was convicted of drunkenness. Their leaning towards alcoholic stimulants is in a great measure counteracted by the alertness of Corporal Munday. Their morals are fair.

PETER BALLENDINE BAND.

The members of this band live entirely by the hunt. They assemble once a year at Pelican Narrows to receive their annuity money, some of them coming a long way for that purpose. At the last payments they numbered 476 souls; they have no reserve as yet and are scattered over their hunting grounds. I regret to report the death of Councillor Thomas Ballendine, who was accidentally shot while hunting moose.

General Remarks.—The Indians within this agency live by hunting and fishing. As this depends on existing circumstances, which range all the way from nothing to plenty, the quality of their living will be seen to be of a fluctuating character, being well off one year and possibly poor the next, according to fish or fur being plenty or scarce; it is, therefore, difficult to expect permanent progress so long as they live in the manner they do.

I have again to testify to the excellent services of Corporal Munday of the Royal Northwest Mounted Police, who is energetic and conscientious in the discharge of his duties.

I have, &c.,
FRED. FISCHER,
Indian Agent.

PROVINCE OF SASKATCHEWAN,
PELLY AGENCY,
KAMSACK, April 2, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for this agency for the year ended March 31, 1908.

The Pelly agency consists of four reserves, Coté, No. 64, the Key, No. 65, Keeseekoose, No. 66, and Valley River, No. 63A.

COTE BAND.

Tribe or Nation.—The Indians of Coté band are Saulteaux.

Reserve.—This reserve contains about 30 square miles and is situated about 2 miles north of the town of Kamsack on the Canadian Northern railway. The land is

rolling and covered with poplar and willow bluffs, with large openings of farming and hay land interspersed.

Population.—There were 252 souls at the last census.

Health and Sanitation.—There has not been any epidemic or serious disease on this reserve during the past year. Dr. J. I. Wallace, of Kamsack, the medical officer in charge, has been very attentive to all the calls, and has done much to help the Indians, both by careful treatment and by advice regarding cleanliness and sanitation in their homes.

Occupations.—Several of the Indians are farming, with considerable success, while several still follow their former mode of life, hunting and fishing. A great deal of money has been earned selling wood and freighting.

Buildings.—The surrender of the older settled portion of this reserve last summer necessitated the building of new houses and stables by almost all the band. Several good frame and log houses have been built as also several shanties and stables during the past year. Logs for building or lumber are very scarce on this reserve.

Stock.—The stock has fared exceedingly well this year and has wintered in splendid condition.

Farm Implements.—With few exceptions these Indians have all the implements they need, a great many having purchased new ones with their own money during the past year.

Education.—The children of Coté reserve are educated at the Crowstand boarding school. The boys are taught farming and stock-raising, while the girls are taught housekeeping and dressmaking, and both receive excellent school training from Miss McLaren, who is a most able and devoted teacher. Good progress is being made in all lines at this school.

Characteristics and Progress.—The year was not as good financially as the last, but a good deal of money was made. The wheat crop was all frozen, but the oats and barley, with few exceptions, yielded very fair crops. Fur was very scarce and little was earned from that source. Wood was also not as readily sold this year from the fact that Galicians and Doukhobors, who had no crops, were forced to sell wood for an existence, which reduced prices and spoiled the Indians' market for wood. This band is a hard lot to get settled down to steady work, the evil influences of several who are intemperate and immoral, undoing a great deal of our work with the better class.

Temperance and Morality.—The Indians of this band are very much addicted to drinking intoxicants and to immorality, but seem to have steadied up considerably during the last two months.

THE KEY BAND.

Tribe or Nation.—The Indians of the Key band are Saulteaux.

Reserve.—This reserve contains about 38 square miles and is situated about 20 miles northwest of Kamsack and about 3 miles west of Fort Pelly; it is bounded on the west and south by the Assiniboine river. The land is very rolling, but has some good tamarack and spruce timber on it. A large part of it is covered with poplar bluffs with several openings of farm and hay lands well watered.

Population.—At the last census this band had a population of 87.

Health and Sanitation.—The general health of the Indians here was good. Dr. Wallace has charge of this band also and visits whenever needed. Every spring all rubbish is cleaned up around the houses and burned.

Occupations.—Several on this reserve are starting to farm, and we look for a much better showing during the coming year. The greater number of this band are hunters.

Buildings.—A few new stables and shanties were erected during the year, and several good houses are in course of erection. These Indians have logs out to saw which will make about 75,000 feet of lumber, and we look for new houses of a good quality to be built this coming year.

Stock.—The stock has wintered exceedingly well and very few losses have occurred.

Farm Implements.—Gradually each year this band is purchasing the necessary implements and machinery for more farming.

Education.—The day school on this reserve has been closed for lack of pupils. Most of those previously in attendance have gone to the boarding schools of their choice, and have much better advantages than could possibly be had in a day school.

Characteristics and Progress.—This band had better crops than last year and are a steady of lot of Indians, who want to do more work and are progressing favourably. They do considerable freighting and fishing as well as farming and hunting.

Temperance and Morality.—This is the most temperate band in the agency, being farther removed from towns where liquor can be obtained.

KEESEEKOOSE BAND.

Tribe or Nation.—The Indians of this band are of the Saulteaux tribe.

Reserve.—This reserve contains about 28 square miles and lies about 9 miles north of the town of Kamsack, between the Duck mountains on the east and the Assiniboine river on the west. This reserve has splendid farm and hay lands, also large poplar bluffs containing excellent wood timber.

Population.—At the last census the population was 126.

Health and Sanitation.—There has been no serious epidemic or disease during the past year, consumption and scrofula being the greatest enemy to the Indians. The general health of the Indians, however, was better than last year. Dr. Wallace attends to this band also and has been very prompt to answer all calls for treatment or prescription.

Occupations.—These Indians have done considerable farming, but there is ample room for improvement. A large number of this band also continue hunting and trapping. Quite a large quantity of wood was sold by these Indians.

Buildings.—Several new houses and stables were erected on this reserve during the past year, but most of them still cling to the sod-roofed shanties. Good building timber is very scarce and lumber is an exorbitant price.

Stock.—The stock is in good condition, having wintered well, and very few losses have taken place. During the summer and early winter the heaviest losses were suffered from tuberculosis among the bulls and cows, not only on this reserve, but in the whole agency.

Farm Implements.—These Indians also purchased almost all the necessary farm implements required and are well able to make successful farmers.

Education.—The children of this band are trained at St. Phillippe boarding school, which is under the control of the Roman Catholic Church. The children are given not only school education, but farming, stock-raising, housekeeping, dressmaking and fancy-work are also taught. The Rev. Father DeCorby and his staff are deserving of considerable credit for the progress made in this school.

Characteristics and Progress.—These Indians are progressing slowly and will soon be in a position to support themselves very well. The majority of the Indians here seem desirous of doing better and we look forward to steady advancement. A considerable number of them, however, still continue to hunt and fish for a living; but, as game becomes more scarce, they will no doubt return to farming.

Temperance and Morality.—I am sorry to say that quite a number of this band ar addicted to drinking intoxicants; but their standard of morals is much higher than that of Coté band. The severe punishment given some of them last winter has put a check on the drinking habit; there has not been a case reported for over two months.

VALLEY RIVER BAND.

Tribe or Nation.—The Indians of this band are Saulteaux.

Reserve.—This reserve contains about 18 square miles, of which about 4 square miles is covered with spruce and tamarack timber, the rest being covered with poplar

bluffs interspersed with good farm-lands. The reserve is situated on the line of the Canadian Northern railway at a point 13 miles west of Grandview, Man.

Population.—At the last census there were 64 souls on this reserve.

Health and Sanitation.—Generally speaking, the health of these Indians is good. The accumulated refuse and garbage is cleaned up from around the houses and burned every spring. The houses on this reserve are kept clean and tidy. Dr. Shortreed attends all calls for this band and has been very prompt and painstaking with his work here; but the excessive use of intoxicants by these Indians has no doubt added to his difficulties in making cures.

Occupations.—The members of this band work in the adjacent saw-mills and lumber camps, as well as hunting and trapping. No farming has been done, but now that a farmer is placed in charge, we expect to see several settle down to farming.

Buildings.—The houses are mostly small, but well kept and clean. These Indians have taken quite a number of logs to the saw-mills near by and expect to build better houses and stables this season.

Stock.—The stock here has not increased as it should have done, but as it was too far from the agency headquarters to be watched, no doubt considerable killing and selling took place without permission. This will be rectified now a farmer is in charge.

Farm Implements.—These Indians have very few of the necessary implements as yet, not having started farming.

Education.—The children from here who desire an education go to the Birtle boarding school, where they receive every attention and instruction possible.

Characteristics and Progress.—Very little progress has been made here, as these people being remote from the agency headquarters, and having no resident instructor on the reserve, have worked as they chose in saw-mills and lumber camps, and never settled down to cultivate their lands. They are a very able and intelligent lot of people and should do good work under the present overseer.

Temperance and Morality.—The Indians of this band, being in close touch with hundreds of lumber-jacks and river-drivers, are seriously addicted to drinking strong liquors; but the overseer in charge will, no doubt, check this curse to a great extent.

GENERAL REMARKS.

Although the year has been a bad one for farming, still there was considerable progress made by the Indians of this agency. New land was broken and new houses either built or in course of erection. The Valley River and the Key bands have sufficient timber taken out for sawing to build new houses for all the workers on each reserve. The Indian cattle sold well, some 65 head of steers sold to Mr. Duncan of Yorkton, averaging $45 per head. Besides these, the Indians sold privately or killed for their own use about 25 head more. We have yet on hand over 200 tons of hay, some of which the Indians will be able to sell later on. The scarcity of fur-bearing animals and rabbits made it a hard year for the hunters and the old people, and we were unable to reduce our rations as we had expected, but look forward to better times this year. There were several cases of measles in the agency and Crowstand boarding school during the year, but nothing of a serious nature or of an epidemic, and the prompt action of Dr. Wallace in quarantining each case soon stamped the disease out. The large sum of money received by Coté band from the sale of part of their reserve, no doubt added to the amount of drinking here; but I believe the curse has received a very serious check this year, and while much money was spent on liquor, we are glad to know that a much greater amount was spent for horses, farm implements, wagons, sleighs and food. Unfortunately the fell disease, glanders, broke out among the horses here, and the agency and Indians lost 13 horses, which is a very serious loss to us. During the year a telephone line has been installed between the Indian office and the town of Kamsack, which has proved a great convenience.

I have, &c.,

W. G. BLEWETT,

Indian Agent.

PROVINCE OF SASKATCHEWAN,
QU'APPELLE AGENCY,
BALCARRES, April 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report on the Qu'Appelle agency for the year ended March 31, 1908.

The Qu'Appelle agency consists of eight reserves: Piapot, No. 79; Muscowpetung, No. 80; Pasqua, No. 79; Standing Buffalo, No. 78; Peepeekesis, No. 81; Okanees, No. 82, Star Blanket, No. 83; and Little Black Bear, No. 84.

PIAPOT BAND.

Tribe or Nation.—The Indians of this band with few exceptions belong to the Cree tribe.

Reserve.—This reserve is situated about 32 miles west of Fort Qu'Appelle. It comprises township 20, and part of 21, range 18, west of the second meridian, and contains about 58 square miles. The land of this reserve is a light sandy loam, somewhat stony and badly broken with sloughs and coulees. There is, however, more than sufficient farming land of very fair quality for the band, and while the crops are never heavy, they mature early and usually escape frost. Last year's crop was frozen, but there was sufficient seed-wheat of fair quality on the reserve for this spring.

The reserve had abundance of hay in the Qu'Appelle valley, and the Indians here usually have a surplus supply for sale. This year the surplus is considerable, but the market is very poor.

The wood on this reserve is small and very little is sold.

Population.—The band numbers 158 souls.

Health and Sanitation.—This band is healthy. There are few cases of consumption or scrofula. The majority of the houses are clean and well kept. The number of good houses is increasing.

Occupations.—This band has not had a resident farm instructor for two summers, and in consequence the farming has not improved. The crop returns for 1907 show a yield of 3,109 bushels. Of course the returns were much smaller than would have resulted from an unfrozen crop. The cattle on this reserve are very well looked after. During the summer of 1907 a large pasture was fenced for the cattle, the Indians paying for all the material and performing the work. Considerable money was earned from the sale of wood, hay, bead-work, &c.

Houses.—Two houses of one and a half storeys, with good shingled roofs and floors, were erected this year. The stables are constructed of logs and poles, and are very comfortable.

Stock.—The Indians here realize considerable money from the sale of cattle, besides having a good supply of beef for home consumption. The cattle are improving in quality.

Farm Implements.—The Indians of this reserve are fairly well equipped with farm implements, almost all being their own property. They also own a quarter interest in a threshing-machine.

Education.—Some of the children from this reserve attend the Qu'Appelle industrial school, and some the Regina industrial school. The parents are showing more interest in the education of their children year by year.

Characteristics and Progress.—This band is making gradual progress, building better homes, getting better outfits, &c. There are a few old people who are assisted by the department, but very few.

Temperance and Morality.—Very few cases of intoxication have come to my notice during the year. I believe there is more immorality on this reserve than on the other seven, but it is very difficult to secure evidence.

MUSCOWPETUNG BAND.

Tribe or Nation.—The Indians of this band are Crees and Saulteaux.

Reserve.—This reserve lies east of Piapot's and south of the Qu'Appelle river, and has an area of about 58 square miles.

The land is heavier than that of Piapot's. Some excellent land is found on this reserve, but a part of the south is poor land, bearing considerable alkali. The supply of hay is very plentiful, both of prairie wool and valley hay. The wood-supply is limited, but sufficient for the band and some for sale.

Population.—The population of this band is 86.

Health and Sanitation.—These Indians are not so healthy as those of Piapot's band. There is considerable consumption and scrofula. Some new houses have been built this year, which are somewhat of an improvement on the old, being larger and higher. Some of the houses here are kept clean, but some of the older Indians cannot be induced to see the necessity for cleanliness and ventilation.

Occupations.—The occupations here are the same as on Piapot's reserve, farming, stock-raising, and some muskrat-hunting. Considerable surplus hay is sold each year. These Indians, for their numbers, have a good herd of cattle, and, although their energy is not sufficient to lead them to do a great deal of farming, yet they are pretty well off.

Buildings.—The houses are somewhat of an improvement over last year, but are all sod-roofed, and the majority without any ventilation; but almost all are floored with lumber. The stables are mostly log, and are comfortable.

Stock.—These Indians have a fine herd of cattle, Shorthorn grades, with a strong strain of Galloway. These are pastured during the summer in a large pasture with abundance of feed and water.

Farm Implements.—These Indians are well supplied with farm implements from their own earnings.

Education.—These Indians now offer little, if any, opposition to the education of their children. Some of their children attend the Qu'Appelle industrial school, and some the Regina industrial school.

Characteristics and Progress.—The majority of these Indians are old men and only one or two are at all good workers, but get a good living from the sale of grain, cattle, wood and hay. The crop of 1907 was all frozen, some wheat being unfit to cut.

Temperance and Morality.—This band is temperate, and, I believe, very moral.

PASQUA BAND.

Tribe or Nation.—The Indians of this band are principally Saulteaux.

Reserve.—This reserve is bounded on the west by Muscowpetung reserve and on the north by the Qu'Appelle river and lakes. It is about 6 miles west of Fort Qu'Appelle. The area is about 35 square miles. There is considerable wood on this reserve, but little hay, being made up principally of prairie wool.

Population.—The population of the band is 131.

Health and Sanitation.—The general health of the Indians of this band has been good. These Indians are more advanced than those of Muscowpetung and Piapot's reserves, having a number of good houses and stables, and almost all the houses are exceptionally well kept.

Occupations.—Nearly all the younger Indians and a number of the older ones depend almost altogether on mixed farming for sustenance. There are some good farmers on this reserve. Considerable money has been earned by the sale of logs. Some fishing was done during the past winter, which yielded very fair returns. The wheat on this reserve was not so badly frozen as on the two before mentioned; consequently the Indians have had better returns from their farms.

Stock.—The herd of cattle on this reserve is not large, owing to the scarcity of hay, but prove fairly profitable, supplying beef for home consumption and a number to sell besides. Good bulls are used and the cattle are of very good quality. They are kept in a pasture during the summer.

Farm Implements.—This band is well supplied with farm implements, almost all being private property.

Education.—The children from this band are all sent to school quite willingly.

Characteristics and Progress.—This band is steadily making progress. There are enough individuals who are good farmers to act as an example and incentive to others to do well. I might mention as examples Tom Stevenson, Sam Cyr, Antoine Cyr, George Thorne and Andrew Gordon.

Temperance and Morality.—The same difficulty is found here as last year. The proximity of new towns, new settlements filling up, many strangers coming in, make it easy to secure intoxicants. Strict punishment is meted out when evidence can be found.

STANDING BUFFALO'S BAND, NO. 73.

Reserve.—This reserve is situated in townships 21 and 22, range 14, west of the second meridian, and contains an area of 7 square miles. The soil is a light sandy loam something similar to Piapot's.

Population.—The population of this reserve is about 219.

Tribe or Nation.—These Indians are Sioux or Dakotas, and formerly resided in the United States and do not draw treaty here.

Health and Sanitation.—These Indians are very healthy. There is very little sickness among them. The majority of the houses are small, but are kept clean and tidy.

Occupations.—These Indians farm almost all the tillable land on the reserve and keep a few cattle. The pasturage is very limited and hay is not easily secured. The men earn considerable as farm labourers and are in demand at good wages. The women are good gardeners and raise good crops of vegetables.

Buildings.—The majority of the houses are small, but are well kept. There are now a number of good houses with shingle roofs. Two good new houses were built this year. All are well kept. The stables are not large, but are sufficient.

Stock.—The herd here is small, as fodder is hard to get, but what are kept are well kept, and add to the income of the band besides supplying some beef.

Farm Implements.—These Indians are well supplied with farm implements of their own.

Education.—Almost all the children from this reserve attend the Qu'Appelle industrial school and are very quick to learn.

Characteristics and Progress.—Being strong, healthy and fairly energetic, the men of this band earn considerable money outside of their farm returns by working for farmers off the reserve. The men practically all dress like white men, and almost all live like them. They are very fond of sport, and have an excellent football team.

Temperance and Morality.—One case of intemperance came to my notice during the year, but none of immorality.

FILE HILLS BANDS, NOS. 81, 82, 83 AND 84.

Tribe or Nation.—These Indians belong to the Cree tribe.

Reserve.—These four reserves are situated in ranges 10 and 11, west of the second

meridian, townships 21, 22, 23 and 24, about 10 miles north of the towns of Abernethy and Balcarres on the Pheasant Hills branch of the Canadian Pacific railway.

These reserves are bluffy and have many sloughs, the farming land being on the east side, and the best of this on Peepeekesis reserve. The soil there is a good sandy loam and with good cultivation produces excellent crops.

Population.—The population is as follows: Peepeekesis, 112; Okanees, 58; Star Blanket, 39; and Little Black Bear, 57.

Health and Sanitation.—The general health of the Indians here is fairly good, although there is considerable consumption and scrofula. In the majority of cases the houses are cleanly and well kept.

Occupations.—All the younger Indians and some of the older are engaged quite extensively in mixed farming. The bands own large herds of cattle, which, by feeding and putting up hay, require considerable labour. Considerable money is also earned from the sale of wood, pickets and dry logs. The loss of the bulk of the crop by frost this year was hard for some, but all have made a very good living.

Buildings.—The houses and stables in the colony are of superior quality, and some good houses are found even among the old Indians.

Stock.—The cattle owned by these bands are of very good quality. Good bulls are used. The cattle run in a large pasture in the summer and are fed by the owners in the winter. Some excellent horses are also in possession of these Indians and a number of good colts bred from a registered Clyde stallion are growing up. The ex-pupils on the colony are also keeping cows, pigs, and hens.

Farm Implements.—These Indians are well supplied with farm machinery and take very good care of it.

Education.—Considerable interest is taken in the education of their children by the majority of these Indians. The children of these bands attend either the File Hills school or Qu'Appelle school.

Temperance and Morality.—No difficulty has been experienced with any of these Indians during the year in regard to either intemperance or immorality.

GENERAL REMARKS.

The bulk of the wheat crop having been frozen in the colony, this year was rather a serious setback, but the boys are going ahead as usual again. Happily there was almost enough wheat left over from the crop of 1907 for seed for the whole of the Indians. More land is being cultivated year by year, more houses and stables being built, more machinery and horses purchased, and altogether these young people are doing well.

The Presbyterian Church built a church in the colony this year, largely through the contributions of the Protestant graduates; and the Roman Catholics have also the material on the ground ready for building a church.

I have, &c.,
W. GORDON,
Indian Agent.

PROVINCE OF SASKATCHEWAN,
TOUCHWOOD HILLS AGENCY,
KUTAWA, April 11, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report, together with a statistical statement and inventory of all government property under my charge for the fiscal year ended March 31, 1908.

Five reserves are included in the agency, namely: Muscowequan's, No. 85; George Gordon's, No. 86; Day Star's, No. 87; Poorman's, No. 88, and Fishing Lake, No. 89.

The agency headquarters are situated on section 16, township 28, range 16, west of the 2nd meridian, on the old Carlton trail, about 50 miles northwest of Lipton on the Kirkella branch of the Canadian Pacific railway.

The Grand Trunk Pacific railway passes through the Muscowequan reserve, and it is expected that a station will be located within 6 miles of this agency. This will be a great convenience and a considerable saving will be effected, as in the past the outlay for freighting supplies was considerable.

The government telegraph station, Touchwood, is situated here, at Kutawa.

MUSCOWEQUAN BAND, NO. 85.

Reserve.—This reserve is situated about 10 miles southeast of the agency headquarters and comprises an area of 24,271 acres. The soil is a good clay loam and the reserve is well adapted for mixed farming.

The eastern portion is rolling prairie interspersed with poplar bluffs and hay sloughs. There is a heavy bush on the western portion, from which good building logs and fire-wood are obtained.

The main line of the Grand Trunk Pacific runs through this reserve, and a siding has been located thereon.

Population.—The population of this band is 133.

Health and Sanitation.—The health of this band has been good. Some cases of small-pox were found in one of the houses on November 27. The house and inmates were immediately placed under quarantine, and the disease fortunately did not spread. All the cases recovered.

The members of this band requiring it were all vaccinated during the summer.

The rubbish which collects around the dwelling-houses is raked up and burned in the spring.

Occupations.—Farming, cattle-raising and hunting are the main occupations from which the members of this band make a living. The proceeds derived from the sale of logs, fire-wood, willow posts and hay now form an important source of income for these Indians.

They are steadily bringing more land under cultivation, and are practically self-supporting.

Buildings.—The dwellings on this reserve are built of logs with sod roofs. They are, with a few exceptions, kept fairly clean, and appear to be warm and comfortable.

These Indians live in tents during the summer months.

Stock.—The cattle owned by this band are a good quality of stock. They were well cared for during the past winter and came through in excellent condition.

The hay-supply provided was ample and several stacks were carried over.

Farm Implements.—These Indians are fairly well equipped with farm implements, which are added to as required.

Education.—The children of this band attend the Muscowequan boarding school, whose property adjoins the reserve. This school is under the auspices of the Roman Catholic Church.

The boys are given a good training in farming under the direct supervision of a lay brother who is a practical farmer.

The girls receive instruction in cooking, butter-making and general housework as well as in sewing and knitting. In fact they make nearly all the clothing required by the pupils.

The class-room is presided over by Sister Riordan, who is very competent, and the progress being made by the pupils is very satisfactory.

This school has a large and well kept farm and garden in connection.

Temperance and Morality.—No cases of intemperance or immorality came to my notice during the year.

GEORGE GORDON'S BAND.

Reserve.—This reserve is situated in the Little Touchwood hills about 13 miles south of the agency headquarters, and will be within 8 miles of a station on the Grand Trunk Pacific when it is completed.

The reserve comprises an area of 35,456 acres. The northeastern portion is covered with poplar bush and scrub. The open land on this reserve is rough and stony and hard to bring under cultivation; the soil, however, is good and when brought under cultivation produces good crops.

Population.—The population of this band is 199.

Health and Sanitation.—There has been a great deal of illness amongst the children of this band during the year and the death-rate has been higher than usual. This was mainly caused by an epidemic of whooping-cough and grippe.

The sanitary precautions as prescribed by the department are strictly observed by this band.

Occupations.—The main occupation on this reserve is mixed farming. These Indians also add to their income by the sale of fire-wood and logs, working for settlers, and hunting.

This band is the most civilized in the agency and many of the homes compare favourably in appearance and surroundings with those of the better class of white settlers in the district.

Buildings.—The buildings on the reserve are nearly all one and a half storeys high with shingled roofs and are well finished. They are almost without exception kept scrupulously clean.

Stock.—The cattle came through the winter in good condition. Many of the Indians keep milch cows all the year round, and make butter for their own use and for sale.

After supplying themselves with fresh beef and also the agency during the summer and winter months, there was a surplus of steers for sale.

Farm Implements.—This band is well equipped with farm implements, which are added to as required.

They have a threshing-machine and one of their number who attended the Elkhorn industrial school runs the engine and does the blacksmithing required by the band.

Education.—The Gordon boarding school, which is under the auspices of the Church of England, is situated in a central position on this reserve. It provides accommodation for thirty pupils and that number is in attendance.

Mr. Mark Williams and his wife are principal and matron respectively, and they keep everything in good order. The children are making fair progress in the classroom under Mr. George Jones, who acts as teacher.

It has been very noticeable here that, while the health among the children on the reserve has been very poor, there has been very little sickness in the school.

The building is kept well aired, clean and tidy at all times.

The majority of the members of the band belong to the Church of England. They have their own church situated on the reserve and it is kept in repair by the members.

Temperance and Morality.—No cases of intemperance or immorality came under my notice during the period reported upon.

DAY STAR'S BAND, NO. 87.

Reserve.—This reserve is situated in the Big Touchwood hills, and comprises an area of 15,360 acres, most of which is covered with a heavy growth of poplar bush and willow scrub, hay-sloughs and small lakes. There is a small portion of open land near the southeast corner which is being steadily brought under cultivation. The soil is rich black loam and is very productive.

This reserve is better adapted for stock-raising than for the growing of grain.

Population.—The population of this band is 43.

Health and Sanitation.—The general health was good until the latter part of the year, when nearly all the children suffered from whooping-cough, from the effects of which three deaths occurred.

The houses and premises were kept clean and tidy and sanitary precautions were observed as far as possible. These Indians live in tents during the summer months; but before leaving their winter quarters the rubbish is raked up and burned.

Occupations.—Cattle and grain-raising are followed as a means of livelihood. These Indians add to their income by hunting, selling logs, fire-wood and willow posts; hunting and digging senega-root are also engaged in by these Indians.

Buildings.—The dwelling-houses are log buildings roofed with sod. They chiefly consist of two rooms, which are well lighted and floored with lumber.

Stock.—The cattle belonging to this band are of good quality and provide an important source of income for them. They were well cared for during the winter and came through in good condition.

Education.—A day school is in operation on this reserve under the auspices of the Church of England. Mrs. S. Smythe is the teacher, and she is doing good work. The children are taught sewing, knitting and gardening in addition to the usual class-room studies. The children take a great interest in their school, and no difficulty is experienced in keeping up a regular attendance.

A new frame school building was erected during the year.

Temperance and Morality.—These Indians are not addicted to the use of intoxicants, and their moral conduct is good.

POORMAN'S BAND, NO. 88.

Reserve.—This reserve is situated about 9 miles northwest of the agency headquarters, and comprises an area of 27,200 acres, nearly all of which is rolling prairie, broken here and there with sloughs. The soil is a warm clay loam, which is well adapted for the growing and maturing of grain and root crops.

There is an abundant supply of hay available on this reserve.

Population.—The population of this band is 117.

Health and Sanitation.—The general health has been good among the adults. Whooping-cough was prevalent during the latter part of the winter, and was the cause of a great deal of the mortality amongst the children.

An improvement was noticed in cleanliness in their houses during the past winter. These Indians are inclined to be untidy and careless housekeepers.

The importance of keeping their houses and premises clean is being constantly explained to them.

Occupations.—The resources from which these Indians gain their livelihood are: mixed farming, hunting, freighting, senega-root, working for settlers, sale of fire-wood, bead-work and tanning hides, &c.

They are practically self-supporting and the only help given is to the sick and destitute. They are steadily increasing their acreage under cultivation and are working more independently.

Buildings.—The buildings with one exception are composed of logs with sod roofs. Although in most cases they are small, they appear to be warm and well lighted and seem to suit the Indian idea of comfort.

Stock.—The stock on this reserve is steadily increasing in numbers. An ample supply of hay was put up and the cattle came through the winter in very good condition.

Farm Implements.—These Indians are steadily adding to their supply of farm implements, and are now fairly well equipped in this respect.

Education.—There is no school on this reserve. Ten of the children are now attending the Gordon boarding school, two at Muscowequan's, one at the Elkhorn industrial school and one at Qu'Appelle industrial school.

There are several children on the reserves of school age who are not attending school owing to the opposition of their parents. The prejudice against schools is being gradually overcome.

Temperance and Morality.—No cases of intemperance or immorality were brought to my notice during the year.

FISHING LAKE BAND, NO. 89.

Reserve.—This reserve is situated about 50 miles northeast of the agency headquarters and comprises an area of 22,080 acres. A portion of the reserve is level prairie, which is well adapted for farming. The remainder is rolling land interspersed with hay sloughs and poplar bluffs.

A portion of the Fishing lake is included in this reserve, and the fish obtainable therein forms a source of income which the Indians take advantage of to a limited extent.

Population.—The population of this band is 105.

Health and Sanitation.—The general health has been good. There was an outbreak of scarlet fever on this reserve in the fall. Dr. Ainley, of Wadena, was called in, and attended to those requiring his services.

These Indians still derive a great deal of their support from hunting, and only occupy their houses from time to time, even during the winter months.

They are not very cleanly in their habits.

Occupations.—The main source of income is derived from hunting, working for settlers and sale of fire-wood.

They may be classed as self-supporting.

Buildings.—Their houses are neatly built and many of them have thatched roofs. During the past winter quite a lot of material was taken out of the bush for new buildings.

Stock.—The cattle on this reserve are of good quality. An ample supply of hay was secured and the stock came through the winter in good condition.

Farm Implements.—These Indians purchased 6 ploughs, 2 disk-harrows, 3 mowers, 3 rakes, 8 wagons, 6 bob-sleighs, besides sundry other implements and harness, from money advanced by the department on account of the surrender of a portion of their reserve, and it is their intention to commence breaking land this year.

Education.—A day school is situated on this reserve. It is under the auspices of the Church of England, with the Rev. Wilfred Sandilands in charge.

The attendance is gradually increasing, but will necessarily be small until the Indians give up their roving habits and settle down on their reserve.

Temperance and Morality.—No charge was laid against any of these Indians for intemperance during the year; but I am afraid that some of them indulge 'on the quiet.' They appear to be fairly moral in their habits.

GENERAL REMARKS.

Land Surrender.—During the months of July and August I accompanied Inspector Graham to Fishing Lake, Nut Lake and Kinistino on business connected with the separation of the three sections of Yellow Quill's band, which was satisfactorily arranged.

On the return to Fishing Lake, an arrangement was made with the Indians of that point whereby they agreed to surrender a portion of their reserve 3½ by 6 miles, and a considerable amount of money was paid to them on account of this.

The Indians asked my assistance and advice in expending their money, and I purchased several good teams of horses as well as a car-load of flour, wagons, ploughs, harness and other useful articles for them; very little of their money was expended foolishly.

During the year Dr. Harvey resigned his position as medical officer, and Dr. Phillipps, of Kutawa, was appointed in his place.

Characteristics and Progress.—The past year has been rather a trying one for farmers in this western country, inasmuch as the crops, upon which so much depends, were nearly all frozen and almost a total loss.

Our Indians suffered with the rest; but, notwithstanding this, they have not been an increased burden on the department. They are becoming independent of the ration-house and a steady reduction is being effected in the issue of food-supplies.

They are steadily increasing their acreage, and with the advent of the railway, which will bring the markets within reasonable distance, I trust that they will become encouraged to make greater efforts in this direction.

It is also encouraging to note that no charges of any nature were preferred against any of the Indians of this agency for infraction of the law during the past twelve months.

I have, &c.,
W. MURISON,
Indian Agent.

PROVINCE OF SASKATCHEWAN,
NORTH SASKATCHEWAN INSPECTORATE,
PRINCE ALBERT, April 20, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the inspection of Indian agencies and reserves for the year ended March 31, 1908.

DUCK LAKE AGENCY.

This agency includes Beardy's, Okemahsis,' One Arrow's, John Smith's and James Smith's bands of Cree Indians, to which have been added in recent years the Kinistino and Nut Lake bands of Saulteaux.

The headquarters of the agency are on Beardy's reserve, about 3¼ miles northwest of the village of Duck Lake.

The agency staff includes Mr. James Macarthur as agent; J. H. Price, agency clerk ; Henry Gardipie, teamster and interpreter ; Louis Marion, farmer on One Arrow's reserve; Peter Campbell, farmer on John Smith's reserve; Jeremiah Stevens, farmer on James Smith's reserve, and P. J. Hamilton, officer in charge of Kinistino and Nut Lake reserves.

The inspection was made in July and August. The population of the agency at that time included 642 Crees and 292 Saulteaux. During the twelve months ended March 31 there were among the Cree bands 54 births and 43 deaths, and among the Saulteaux 22 births and 21 deaths. The largest increase is shown in Beardy's band, where there were 16 births, equal to 117 in 1,000, while there were but 5 deaths, equivalent to 36 in 1,000.

I found a further improvement in the Indians' dwellings, both as to the structure of the buildings and as to their sanitary condition. This was most marked on John Smith's reserve, where the Indians almost without exception occupy their houses throughout the year and where comfort and cleanliness is the general rule. Several well finished new houses were found there.

The past has been a lean year with the Indians generally throughout this inspectorate as compared with the average. The season was unfavourable for agriculture; the market for beef cattle has been dull; and game and furs have been unusually scarce, and the main portion of the income of every Indian is affected by one or other of these conditions.

Owing to the lateness of the spring and the general failure to prepare land the year before, the acreage of crop in 1907 was much less than in 1906, while there was a shrinkage of over 60 per cent in the aggregate yield of grain.

The cattle industry has been fairly successful. The total number showed a decrease at inspection of about two per cent, but the owners had realized a considerable benefit from their herds, having sold in the aggregate 174 head and beefed 166.

So evident has been the success of the efforts to improve the quality of the Indians' cattle by the use of pure-bred sires during the past twenty years that the Indians are now alive to the importance of improving their horses and recognize the value for this purpose of a registered Clydesdale stallion recently provided by the department. The number of horses in this agency is not large, being little more than a team for each working man; but they are gradually acquiring a better class; they take better care of their animals than formerly, and are anxious to increase their stock.

Other live stock is kept by a few of the Indians, and for the most part in small numbers. Two Indians of John Smith's band keep small flocks of sheep, which in spite of very careless management are proving a source of some profit to the owners. As the price of wool is improving and as mutton is worth from 9 cents to 10 cents per pound by the carcass, there is scarcely any industry that should pay better under present conditions than sheep-raising.

Nearly half the population of the reserves of this agency have supported themselves hitherto by hunting. During the past eighteen months, however, there has been a heavy falling off in the income from this source, felt all the more severely as it follows upon a remarkably productive period of two or three years' duration. The prices of most furs continue high; but foxes, lynx, mink and muskrat, which a few years ago were very numerous, are now scarce indeed. One consequence of this state of things which is already apparent is that Indians who have lived in the past by hunting alone are now looking towards agricultural pursuits as a means of support.

A particularly satisfactory feature in connection with the management of this agency is the attention that has been paid for some time past to the direction and encouragement of young men in industrial pursuits. Some of these are graduates of the schools, while others have been educated on the reserves; and much success has attended the efforts to lead them into habits of industry. This is particularly true of Beardy's and Okemahsis' bands, where an excellent showing in agriculture has been made by these young men, and where as an indication of the progress that has been made it may be mentioned that an up-to-date threshing outfit, paid for by themselves, has been operated for some seasons past by the Indians alone, without the aid or immediate supervision of a white man.

Assistance to these young men has been rendered with due caution, and they have not been pampered, but on the contrary are being trained to self-reliance.

Among old and young the disposition to contract debts has been restrained, and the Indians have not been encouraged to incur heavy liabilities to the department or to others.

No material alteration has been made during the year in the government buildings at the agency headquarters or on the reserves. Farm buildings, however, of a substantial and comfortable description have been erected on the Kinistino reserve, where there had previously been no resident farmer. These consist of a dwelling, stable, storehouse and granary, and were completed about the end of August.

CARLTON AGENCY.

This agency includes the Mistawasis,' Muskeg Lake, Ahtahkakoop's, Kenemootayo's, Pelican Lake, Sturgeon Lake, William Charles' and James Roberts' bands of Cree Indians, and a band of Sioux located partly on the Wahspaton reserve near Prince Albert. The inspection was made during December and January.

The staff of the agency at that time consisted of T. Borthwick as agent; T. E. Jackson, clerk; Miss V. J. Hounsell, junior clerk; J. McKenzie, miller and engineer; Frank Bruce, interpreter and teamster; John Dreaver, labourer; Geo. Isbister, farmer on Sandy Lake reserve ; James Dreaver, farmer on Big River reserve ; J. G. Sanderson, farmer on Sturgeon Lake reserve ; J. R. Settee, overseer of the Montreal Lake reserve; and J. Bevtrley, farmer on the Wahsapton (Sioux) reserve.

The total number of Cree Indians in the agency at last annuity payments was 1,489, and although there are no complete statistics available on the subject at the present time, yet as the health of the bands has been fair and the mortality not greater than normal, it is tolerably certain that the population now slightly exceeds that number.

The general health is noticeably better, and the birth-rate larger, among those bands that are leading the primitive and open air life of the hunter and whose food consists to a great extent of fish and game. At the same time, it is observable that under steadily improving conditions a change is gradually coming about in favour of those Indians who are leading the more settled life associated with industries of the reserves.

The dwellings of the Indians throughout the older reserves of this agency are of a superior class, the walls being of logs skilfully dressed and neatly framed together, floors, joists and ceilings of spruce lumber of good quality, roofs of spruce or jack-pine shingles, and doors and windows of convenient proportions and inserted in well fitting casings. On most of the reserves the material is furnished in part from the agency saw-mill and shingle-machine; but on the Sturgeon Lake reserve, where improvements during the past year are very marked, and where these mills have not been operated for many years, all the material with the exception of the logs was purchased by the owners.

With two or three striking exceptions, I found the dwellings and their surroundings in a clean and sanitary condition. Whitewashing, however, had been generally neglected, and in very few of the houses are open fireplaces any longer to be found, a want which has a distinctly noticeable effect on the ventilation. The Indians regard the fireplace as out of date, and it is only by close supervision and sometimes much persuasion that they can be induced to make provision for it in the construction of new houses.

There was a decrease of 16 per cent in the acreage under crop throughout the agency in 1907 as compared with 1906, and a shrinkage of 38 per cent in the aggregate yield of grain of all kinds.

Latterly these Indians are showing more judicious discrimination than in earlier days with respect to the choice of locations in their reserves. At one time the chief consideration was proximity to water, wood, and perhaps hay. Now, however, the enterprising ones are seeking out the more open and fertile portions of the reserves, with a view evidently to more extensive grain-growing. They recognize that the conditions of their industries are changing; as wild hay is becoming scarce and dear, it is necessary to provide a cheaper food for their stock, in order to pursue cattle-raising at a profit, and for this purpose to utilize the by-products of the farming industry. In a few instances locations of 50, 60 or even 100 acres of the choicest land that is to be found anywhere have been selected and securely fenced with tamarack posts and wire, and in some cases a fair proportion has already been brought under cultivation.

Within the eighteen months ended December 31 there was a net increase of 61 head in the Indians' herds of cattle. Sales on foot during this period numbered only

69 head, but no less than 193 head had been beefed by the owners, mainly for their own use, though in some instances for sale at the lumber camps, where there was large demand. The losses through accidents and through neglect, 150 in all, were a heavy tax upon the industry. The conditions, however, in the winter of 1906-7 were particularly severe, and similar losses were usual throughout the district. During the past winter the management of the cattle has engaged the closest attention of the agent, the effect of which will be to increase the interest in their stock and to stimulate the farmers in the discharge of their duties in this connection.

There are 380 horses in the agency belonging to Indians, and 25 belonging to the department. About 10 per cent of the Indians' horses are work animals of medium size, several head having been purchased during the past year at prices ranging between $100 and $200. The most disappointing circumstance in connection with these purchases is that in no case did the Indian pay cash or even make any considerable cash payment. Of the 25 government horses two are stallions of a general purpose class, which are being used for the improvement of the Indians' stock.

It is by breeding up from ordinary grade stock, through the exclusive use of thoroughbred sires, that the Indians have come to be the owners of the best class of range cattle in the west, and by a similar method it is expected that they will presently acquire an equipment of working horses adequate to their needs, which are steadily increasing.

A further attempt is being made to introduce hog-raising on the reserves adjacent to the agency headquarters. Though this is an industry that cannot as yet be made a general success among the Indians, yet there is no reason why a few of the thriftiest should not engage in it even now with much profit.

A number of Indians who have for a few years past lived abroad from their reserves, earning in various ways a more or less uncertain livelihood, have lately returned, empty-handed and for the most part destitute, and are anxious to be given a fresh start. They are being helped judiciously and may in time again share in the general prosperity of the bands to which they belong.

A fair number of the Indians of these reserves who are regularly established in farming are entirely self-supporting, or so nearly so that any small issue or assistance they receive is given more as a matter of encouragement than as a necessity.

The reserves have already been visited very regularly by the agent, which is certain to have a beneficial effect; and I have recommended to the agent that instructions to the farmers be issued from time to time from the agency office confirming the instructions that he may have given verbally when at the reserves, in order to give greater definiteness and force to these instructions, to remove any opportunity for avoiding responsibility, and for the sake of the help and guidance that may be thus afforded to the farmers and the support it may lend to their authority over the Indians under their charge.

More than half the Indians of this agency support themselves by hunting, deriving a large proportion of their food-supply from the splendid fish of the lakes to the north. While the Indians admit that the white man can teach them how to rake the bottom of the lakes for fish, they are not supposed to be able to learn much about hunting the deer or trapping the fur animals, and accordingly this industry receives no direction. The remarkable falling off of game and furs, however, that has occurred within the last year or two, is causing them much concern, and there is a movement on foot for the whole of William Charles' band to abandon their hunting grounds and migrate to reserve 106A, which was once set apart for them for the purpose of farming.

The Sioux population of this agency numbers about 120 in all. They are located partly on the Wahspaton reserve, 9 miles northwest of Prince Albert, and partly in a camp on government and private land nearer to the city. Those on the reserve follow pursuits similar to those of the Crees, and live in much the same condition; while those who dwell in the camp earn a livelihood mainly by working in the city and on the farms of the locality, supplying themselves abundantly with food and

clothing, but living miserably in every other way. A few have recently removed from the camp to make their permanent abode on the reserve, induced by the measure of prosperity that their kinspeople are there beginning to enjoy. Sections 3 and 4, township 50, range 27, west of the 2nd meridian, which have for some years past been reserved from settlement for such of these people as desired to locate there, are now partially occupied and cultivated.

Extensive additions and improvements have been made to the government buildings at the agency headquarters during the past eighteen months. Some repairs have also been made to the farm dwellings on the reserves.

During the greater part of the past year, Mr. Borthwick was absent from the agency, being employed in other duties for the department, and the management of the agency devolved upon Mr. Jackson, the agency clerk, an arrangement which necessitated the employment of a junior clerk for the time. A most regrettable circumstance which has to be mentioned in this connection is the death of Miss Hounsell, which occurred at the agency about the date when the term of her appointment as junior clerk was to have expired.

MOOSE WOODS RESERVE.

This reserve is situated on the right bank of the South Saskatchewan river, about 18 miles above the city of Saskatoon.

It is occupied by a portion of the late Chief Whitecap's band of Sioux, including 16 men, 18 women and 16 children, 50 in all.

The inspection was made in February.

For about a year past the reserve has had no regular supervision, Mr. W. R. Tucker, the former overseer, having been granted an extended leave of absence. I found, however, that Charlie Eagle, an intelligent young Indian of the band, was well informed as to the affairs of all his neighbours, and was endeavouring, though without definite responsibility, to look after them as he had seen Mr. Tucker do in the past.

The main industry of this band is cattle-raising, and this proves a continued success. Losses have been light, while on the other hand the owners have had their beef-supply, and in addition have sold in the aggregate during the past year beef cattle to the value of $2,200. The sales were conducted by Mr. Tucker, who made a special visit to the reserve for this purpose, and as usual the highest prices were realized. The 3-year-old steers brought uniformly $45.50 per head.

Farming has not been attempted in the past, but gardening has been made a success, and the Indians are now anxious to engage in the raising of grain.

There are no longer any work oxen on the reserve, but there is a good stock of horses, 67 head in all, some of which are working animals of very fair size and serviceable for all ordinary farm work.

Apart from their cattle the income of these Indians is derived from the sale of hay, wood, berries, fish, ducks and muskrat-skins; and from day labour, especially in connection with threshing, from which source they derived upwards of $200 within the space of two or three weeks last fall.

The day school has been closed for about three years. The old building, which was once centrally located, is now from 2 to 3 miles from the Indians' dwellings, as they have gradually moved toward the southern portion of the reserve in order to be nearer the hay-lands which were added to the reserve since the school was built. There are eight children of school age in the band, and the building of a new and better school-house at a point convenient to the dwellings of the Indians is a question under consideration.

The results of the past work of the school on this reserve are very satisfactory. Among the younger men and women there are scarcely any who cannot communicate quite freely and intelligibly in English, while some have acquired considerable information through the reading of newspapers.

In October last, these people built a new church on a convenient site in the portion of the reserve which is now settled, and about two and a half miles from the old school and mission. The new building is neatly finished, the work being performed by the Indians voluntarily. They also provided all the material, contributing whatever money was required except for a donation by Mr. Tucker.

BATTLEFORD AGENCY.

I visited the Battleford agency for a few days in the beginning of January, but did not make a full inspection.

The list of employees continues the same as at my last inspection.

With the exception of Kahpahawekenum's band at Meadow Lake, the Indians of this agency may be said to live exclusively by the agricultural and live stock industries.

A decrease of 18 per cent in the aggregate yield of wheat for 1907 as compared with 1906 is fully accounted for by the less favourable weather conditions of the spring of 1907. The cattle and horseraising industries, however, have prospered, and the owners have realized a large benefit from their herds.

The steady prosperity of the bands of this agency is very well indicated by the decrease in the issue of food during the year ended March 31, 1908, as compared with the year ended June 30, 1898, namely, 86 per cent in flour, 88 per cent in bacon, and 74 per cent in beef. In other words, there has been issued for the assistance of workers and for the relief of the destitute during the past fiscal year only about one-eighth as much flour and bacon and one-fourth as much beef as for a corresponding period ten years ago ; while a substantial reduction is also observed in the issues of clothing and of minor articles of food. Moreover, with this smaller issue the Indians are very much more comfortable than they formerly were with the larger allowance.

In general the health of the Indians has been good throughout this agency during the past year, and the birth-rate exceeds the death-rate, a matter in which there is a noticeable improvement from year to year, though for the past decade there is on the whole a decrease in the bands of this agency from natural causes.

The Onion Lake agency was not inspected during the year.

I have, &c.,

W. J. CHISHOLM,

Inspector of Indian Agencies.

PROVINCE OF SASKATCHEWAN,
SOUTH SASKATCHEWAN INSPECTORATE,
BALCARRES, May 9, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my fourth annual report on matters in connection with the different agencies in the South Saskatchewan inspectorate.

ASSINIBOINE AGENCY.

I made my annual inspection of this agency in May and June, last.

Staff.—The staff at the time of my inspection consisted of an agent, W. S. Grant, and a farmer, Jas. Hassan.

Office.—I made a thorough inspection of the office, and found the books and records properly kept, the work being done by Mr. Grant and his son, who is now on the regular staff of the agency.

Cattle.—I found the cattle rather poor in condition owing to the extremely severe winter that they had just come through. I consider the losses light compared with other parts of the country; as near as I could find out the loss was about 8 per cent.

The Indians of the band beefed and sold some 27 head during the year. At the time of my inspection, there were 154 head of cattle on hand, being an increase of 3 head over the previous year. The cattle reports from this agency for the past winter are very satisfactory, the losses being very light indeed.

I found the two throughbred bulls had been kept at the agency headquarters all winter, and the animals looked in the best of condition.

Crop.—I was greatly pleased to find that the area under crop was almost double what it was the year before. The band had about 600 acres of wheat and 200 acres of oats. The crop was put in in good time, and had it not been for the early frosts, which struck the whole surrounding district, the crop would have been a record one. However, the Indians were not discouraged and are putting in another large crop this year.

I saw a number of young Indians breaking up new land, which is in crop this year.

The Indians of this agency are beginning to farm on a large scale, and if they continue to do as well as they have in the last two years, there will be some good-sized farmers among them. One man had 155 acres in crop, and another 125 acres, and several had 70 acres in. There was a decided improvement in the way the land had been farmed.

I saw a number of gardens while making my inspection. The Indians have planted a large quantity of potatoes and turnips.

I found the yards surrounding the Indian premises neat and tidy, the rubbish being raked up and burnt.

There was very little sickness in this agency during the twelve months prior to my visit.

About fifteen old people had been receiving regular assistance from the department during the winter.

The agency and farm buildings and premises presented a neat and tidy appearance. A new fence was being built around the agency buildings.

I found the government horses in good condition, and the equipment well looked after.

I was pleased at the way the work of this agency had progressed since my last inspection.

PELLY AGENCY.

The staff of this agency is as follows: agent, W. G. Blewett; farmer, J. R. Brigham; interpreter, Jn. Singuish; medical officer, J. S. Wallace.

I made two inspections of this agency during the year; the first was in June and the second in December.

I found the office work well up, all the records were kept in a neat and business-like way. At the time of my first inspection, Mr. Blewett was doing the office work himself; but shortly after this the department supplied him with a clerk, Mr. A. A. Crawford, who is a good office man and a chemist, which comes in very well in dispensing medicines for the Indians.

The agency buildings presented a neat and tidy appearance. The surrounding premises were also in the best of order.

I found the agency horses in good condition, and the equipment in good order.

The farm implements not in use were carefully stored away in buildings.

I found that the crop had been sown a little late; the cause of this was that the Indians had prepared little or no land the year before, and most of, if not all, the ploughing had to be done in the spring before sowing.

The Indians of the three reserves had in altogether 493 acres of oats, 36 acres of wheat and 31 acres of barley. I visited this agency two months after the crops were sown, and the prospects at that time were exceedingly good for a very heavy crop. However, a few days after my visit, the agency was struck with the same frost that caught all the other agencies in this inspectorate, and the crop was greatly damaged.

As the department is aware, the Indians of Coté's band surrendered three miles of the south boundary of their reserve. It was on this portion of the reserve that most of the Indians resided. Since the surrender, most of the Indians have built new houses, which are a great improvement on the old ones, ploughed new fields, and the reserve now looks much more prosperous than it did, with the old buildings and poorly fenced farm-fields.

Cattle.—The cattle came through the winter of 1906-7 fairly well, considering the severity of the winter. The losses were about 8 per cent. The calf crop in the spring of 1907 was disappointing, the proportion of calves in comparison to the number of stock was small. The increase in calves this spring, 1908, is more satisfactory.

The bulls were kept up at the farm all the winter, and were in good condition to be turned out.

The agent has been greatly handicapped with the enormous liquor traffic that has been going on. However, within the last few months the Royal Northwest Mounted Police have established a post with two men at Kamsack, and, from what I could learn, there is not much drinking going on.

About twenty old people received destitute rations and assistance from the government.

Dr. Wallace is the medical officer for this agency, and he reports the health of the Indians generally good.

MOOSE MOUNTAIN AGENCY.

I inspected this agency between the 6th and 13th of November, last.

At the time of my inspection the staff was as follows: Thos. Cory, agent; J. N. Stewart, farmer.

I began my inspection in the office. I did not find the office work in good order, as Mr. Cory is not an office man. The department has since sent a clerk to this agency, and I am hoping to find the office work in better order.

I found the cattle in good condition to go into the winter. The losses of cattle during the winter of 1906-7 were slightly more than in the other agencies.

The agency bulls were in good condition and were kept at the stables by the farmer during the winter.

There are a number of Indians of this agency owning cattle who take very little interest in them, and have to be followed very closely by the agent or farmer to see that they are properly looked after.

The Indians had ample hay put up for the winter of 1907-8.

Threshing operations were just completed when I was making my inspection. The returns were as follows: wheat sown, acres, 158; threshed, 2,100 bushels; oats sown, acres, 65; threshed, 940 bushels.

The wheat sample was very good indeed, caused by the frosts which affected the whole of the agencies in this inspectorate.

Since my last report the Indians of this agency summer-fallowed 189 acres and broke about 25 acres of new land.

The Indians built several new houses and stables since I reported last.

I understand the health of the Indians has been about the same as usual.

QU'APPELLE AGENCY.

Staff.—The staff is as follows: W. Gordon, agent; A. W. Tye, clerk; A. H. Miles, farmer; W. F. Davidson, farmer; P. Fraser, farmer; A. R. Muirhead, farmer; Jas. Moore, interpreter; H. North, rancher.

I made an inspection of this agency during the months of December and January, last.

I made a thorough inspection of the office and found that all books and records have been correctly kept.

The Indians of this agency are splendidly equipped in the way of farm horses and agricultural implements, all or nearly all of which have been purchased with their own earnings.

At one time it was with difficulty that we were able to induce the Indians here to spend their money on something which would be of practical benefit to them. I am pleased to say that we experience no such difficulty now. The Indians here spend their money as well as their white neighbours do, and the large equipment which they now have goes to prove this.

At the time of my last inspection (January, 1908) there were 1,524 head of horned stock on hand, and the increase since the inspection of January, 1905, was 67 head, a remarkably good showing when one considers that the Indians were able to kill their own beef and sell some 718 head.

The average of losses of cattle in this agency for the last three years has been 4·3 per cent.

There is a decided improvement in the manner in which the Indians of this agency look after their stock: they provide better, and the stables are better. I do not consider that there is any neglect now.

The class of horses is improving. The Indian pony is gradually being replaced by the draught horse, and in this agency there are sixty teams of horses ranging in value from $250 to $550. Quite a number of the Indians are breeding these heavy mares to draught stallions, and at at the present time the Indians have a fine lot of young horses coming on.

The Indians experienced quite a setback last year. In fall and winter I had every horse on the eight reserves of this agency tested for glanders, and as a result of this test 85 head had to be destroyed.

The grain crop of this agency was almost a complete failure at File Hills, and a partial failure on the west reserves (Pasqua, Piapot, and Muscowpetung). On the Sioux reserve the soil is a light sandy loam, and the grain was good, it having ripened two weeks earlier than on the other reserves.

Notwithstanding this partial failure, the Indians produced since last inspection (practically two crops), 127,300 bushels of wheat, and 80,000 bushels of oats; valuing the wheat at 60 cents per bushel, and the oats at 30 cents, the revenue from crop alone would be about $100,00, and if one adds to this the value of cattle sold and beefed (718 head at $35 each) it will be seen that the value of cattle and grain consumed and sold in this agency has been something like $125,000. In addition to this the Indians have sold large quantities of hay, roots, wood, and logs, &c., &c.

Since last inspection 1,860 acres of new land have been broken, and 2,950 acres of land have been summer-fallowed.

The style of farming is improving each year, and there are quite a number of Indians farming from 100 to 200 acres of land.

The largest crop that has ever been put in on this agency is now being sown, and the prospects are very good. The soil is in splendid condition and the Indians have a large summer-fallow to sow.

The colony of ex-pupils situated at File Hills is going ahead all the time. Quite a number of new buildings have been erected during the year, and others are in course of erection.

The Presbyterian members of the colony have, with the assistance of outsiders, and through the efforts of Miss Gillespie, principal of the File Hills boarding school, built a neat frame church, costing about $1,600. The Roman Catholic members of the colony have material on the ground to build a good church; work is to go on at once with the building.

In addition to inspecting the agencies mentioned in this report, I made short visits to Touchwood Hills, and Crooked Lake agencies.

During the past twelve months I have been called upon to do a great deal of special work. The taking of land surrenders at Crooked Lake, Kamsack, Fishing Lake, Leech Lake, and an overland trip to Kinistino taking up much of my time.

I am sending under separate cover a report of the schools inspected.

I have, &c.,

W. M. GRAHAM,
Inspector of Indian Agencies.

PROVINCE OF ALBERTA,
BLACKFOOT AGENCY,
GLEICHEN, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of this agency, together with agricultural statistics and inventory of government property, for the year ended March 31, 1908.

Reserve.—The Blackfoot reserve, with an area of 470 square miles, is situated just south of the main line of the Canadian Pacific railway, about 50 miles east of Calgary. The Bow river enters the reserve near the northern boundary, runs in a southeasterly direction, and leaves the reserve near the southeast corner. Crowfoot creek enters on the northern boundary and empties into the Bow river within 10 miles of its eastern boundary.

In the southwestern portion of the reserve the two Arrow-wood creeks arise, and, flowing northerly, also empty into the Bow river.

On both the north and south sides of the Bow are ridges of sandy dunes.

Some scrub and small timber grow on these sandy dunes and along the river and creeks. The banks average about 150 feet in height, in some places, gradually sloping for a mile or so back of the river, but in other places they are perpendicular.

This valley consists not only of the river-bed, but at intervals of fertile valleys and plains, covered with scrub or heavy timber. The uplands on both sides of the Bow are rolling prairie, broken in places by ponds and forming an ideal stock range.

Population.—The population of the reserve at the annuity payments in November, last, was 814, being a decrease of 13 for the year.

Health and Sanitation.—Owing to the mild weather during last winter, the Indians enjoyed better health, but still there is always some victim of the dread disease phthisis. Care is taken to see that the refuse of the winter is all cleared up and burnt before the Indians leave their houses in the spring. Most of the Indians live in tents during the summer months, the open air life agreeing with them better than being housed up.

There is a hospital containing two wards at the north reserve. A resident doctor and two nurses are in charge. The hospital is under the auspices of the Church of England, but is open to all the Indians on the reserve. Dr. Lafferty, of Calgary, supervises the work of the department.

Education.—The two schools, one under the auspices of the Church of England, and the other the Roman Catholic Church, are still in operation, and are continuing their good work.

Characteristics and Progress.—These Indians are well provided with wagons, harness, saddles, mowers, rakes and other small implements and tools, and, as the country on all sides of the reserve is rapidly filling up with settlers, the facilities for Indians earning money, in many ways, have increased at least 50 per cent, during the past two years; consequently, with the exception of the old, blind and physically incapable, they are practically self-supporting.

Temperance and Morality.—On account of the numerous towns and villages in close proximity to the reserve, the temptations morally are greater and the facilities for procuring intoxicants increased, but in the face of all this, I would consider these Indians as a body, temperate and moral.

I have, &c.,
J. H. GOODERHAM,
Indian Agent.

PROVINCE OF ALBERTA,
BLOOD AGENCY,
MACLEOD, May 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of this agency for the fiscal year ended March 31, 1908, together with the usual statement of agricultural and industrial statistics and inventory of government property.

Tribe.—The Blood Indians are the principal branch of the Blackfoot nation or family in the great Algonkian linguistic stock. The Blackfoot nation consists of the Blood, Blackfoot and Peigan tribes, located in Alberta, and a subdivision of the last named tribe known as the South Peigans, who are United States Indians located in Montana immediately south of the international line. These three tribes with their allies the Gros Ventres and the Sarcees, formed the Blackfoot confederacy, a powerful combination which for a century held by force of arms against all comers an extensive territory reaching from the Missouri river north to the Red Deer and from the Rockies east to beyond the Cypress hills. The protection of their vast territory against invasion imposed upon these Indians a life of almost constant warfare with the numerious enemies which surrounded them on all sides and developed in the people a proud and imperious spirit which after twenty-eight years of reservation life is still the prominent characteristic of the Bloods.

Reserve.—The Blood reserve is situated between the Belly and St. Mary's rivers, and from the forks of these streams runs in a southern direction for about 40 miles to within 14 miles of the international boundary. It contains an area of 540 square miles or some 354,000 acres of splendid land. The two rivers form the boundary line on the north, east and west sides, and furnish an abundant supply of fresh clear water. The south boundary is fenced with a line of barbed wire fencing 15 miles long. There is no building timber upon the reserve, but the river bottoms in places have a fair growth of cotton-wood and willow, which form good shelter for cattle during cold weather. This is the largest Indian reservation in the Dominion.

Population.—The population of the reserve at the annuity payments last November was 1,178, being an increase of 10 for the year.

Health and Sanitation.—There have been no serious epidemics during the year and the general health of the Indians has been fair. The birth-rate was 45 per 1,000 and the death-rate 35.

There is a good and commodious hospital on the reserve, sustained by the government and in charge of the Roman Catholic Sisters of Charity, where attention is given to patients requiring hospital treatment, the institution being regularly visited by the physician provided by the department.

That scourge of the Indian race, tuberculosis, in its two forms of scrofula and consumption of the lungs, is responsible for much of the sickness that occurs on this reservation. For the handling of this and other infectious and contagious diseases we have an isolation hospital containing two small wards and a nurse's room.

Occupations.—Heretofore, the principal occupations of the Bloods have been cattle-raising, haymaking and freighting, to which must now be added farming, which will probably in a few years be the most important work engaged in by the Indians of this reservation as will be explained below under the head of 'Progress.'

The Raymond beet sugar industry has for several years furnished employment for a large number of the Bloods in the spring and fall. Last spring several hundreds of them were engaged for a month thinning beets in the fields, and in the month of October practically the whole population of the reservation was busy harvesting beets in the same fields. As whole families can be employed in pulling and topping beets, as well as in thinning them, the work is more profitable to the Indians than occupations in which the labour is restricted to the men.

Black-horses still operates the coal mine which he has been working for many years, and acquires a considerable income from the sale of coal to the public.

Stock.—Owing to the exceptional grazing capabilities of this magnificent reservation, it has long been recognized that in connection with the cattle industry lies a great hope for the future of these Indians, a belief that is encouraged by the natural fondness of the plains' Indians for live stock. Being convinced that in the ownership of large herds of cattle will be found a solution to most of the problems with which we have to contend in connection with their management, the department for some years furnished annually a number of heifers which were issued to the Indians in a special effort to make cattle-owners of such members of the tribe as could with safety be intrusted with the care of horned stock. This work is not finished, as there are still many young Indians to be given the necessary start, but the showing to date is quite satisfactory. At the last round-up we branded 1,146 Indian calves, and carefully counted the whole herd, which was found to number 5,537 head, showing that our losses during the preceding bad winter were much lighter than the average throughout the district. In the management of these cattle special attention has been given to the matter of quality, which has entailed the purchase and maintenance of an expensive herd of thoroughbred bulls, numbering at the present time 157 head. A few are Galloways, but most of the older bulls are Shorthorns, while most of the young animals purchased during the last three years are Herefords. All these bulls are pedigreed stock. Some we bought in Ontario and Manitoba, but the best and cheapest bulls are those purchased by the department at the annual public auction sale of thoroughbred cattle held at Calgary under the direction of the Department of Agriculture.

Like most Indians of the plains, the Bloods own considerable numbers of native horses, and in order to improve their quality the department keeps on the reservation twenty-nine stallions, which are loaned out to the Indians under appropriate conditions.

Education and Religion.—In connection with this agency the department supports two boarding schools, one in charge of the Church of England, and the other under the Roman Catholic Church, the aggregate attendance being 90 pupils. From the latter school and from the reserve direct are obtained recruits for the industrial school at High River, which at present contains 21 pupils from this reservation.

In religious belief and practice the Bloods are mostly pagan.

Progress.—The extensive and successful growing of fall wheat in South Alberta during the last five or six years having demonstrated the practicability of adding that

industry to the occupations of the Blood Indians, it was decided to go actively into farming last year. As the Bloods are a large community, any work undertaken by them must be on a fairly large scale to be worth while. It was, therefore, thought advisable to place under immediate cultivation a large acreage, and as the initial work of breaking the sod is too heavy for Indian horses to accomplish, except in a limited way, the Indians, upon the advice of the writer, decided to purchase with tribal funds a first-class steam ploughing outfit consisting of a 32 h.p. traction engine and a ten furrow engine gang plough, the intention being to use the steam rig for breaking only, all subsequent work to be done by the Indians with horses. The machinery arrived in due course, and with it 820 acres were broken up for fifteen Indians, who, after thoroughly disking the land, seeded in the month of August an average of forty acres each with fall wheat, the rest being reserved for oats, which were put in this spring, making a total of 820 acres for the first crop. The 600 acres of wheat obtained a good start last fall and came on in the spring with a splendid growth. At the time of writing it is in a perfect condition, there not having been a patch winter-killed on any of the fifteen farms. All the Indian farmers have insured their crops against hail. Under the system adopted these farms are located in groups to facilitate the use of the steam plough, which works to better advantage on a long furrow of a mile or more, to permit economy in implements and to enable the supervision to be done with greater ease and by less men than would be possible were the farms scattered all over the reserve. While the first fifteen farms are thus adjoining one another in a solid block, there is no community of interest except in the ownership of the joint fence that was built by the fifteen Indians to inclose the whole area and in the use of implements. Each man owns his own farm, and, after it is once broken for him, works it individually without having any interest in the work or produce of any of the adjoining farms.

A second block of land, containing 432 acres, is being broken about 15 miles from the first one, and this will, when finished within a few days, be issued to eight Indians selected from a large number who have applied for it. The intention is to continue the breaking until every working Indian on the reserve is supplied with whatever acreage he is capable of cultivating, there being of course a great difference in what individuals can handle.

Though a clamorous minority of the older Indians, headed by some of the principal chiefs, were opposed to the farming scheme, the working element, which is in the majority, is so favourable to the project that the applications for land now aggregate as much acreage as the steam plough will be able to break in two years.

The policy of placing each Indian upon his own resources as soon as they are sufficient for the sustenance of himself and family, has been steadily maintained. The Bloods who are entirely self-supporting now number 269, and a large number are semi-self-supporting.

To illustrate the extent of the reduction that has been effected in free food-issues at this agency, it may be stated that five years ago the issues of free beef amounted to more than 451,000 pounds, while during the fiscal year just ended the free beef issued totalled but 139,000 pounds, a saving of 312,000 pounds in the year.

Temperance and Morality.—The results are still apparent of the department's campaign of two years ago against the traffic in intoxicants to Indians, as there are few cases of drunkenness now reported.

The morality question is at present a more serious one on this reservation, the transgressors being principally young married people who, after quarrelling, separate and insist upon availing themselves of the old tribal right to take other partners. As it is only necessary for them to dispense with formal marriage in the second union in order to evade the statutes, these cases are sometimes difficult for an Indian agent to handle.

I have, &c.,

R. N. WILSON.

Indian Agent.

PROVINCE OF ALBERTA,
EDMONTON AGENCY,
EDMONTON, May 28, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of this agency for the fiscal year ended March 31, 1908.

ENOCH'S BAND, NO. 135.

Reserve.—This reserve is situated about 8 miles west of Edmonton, and contains an area of 19,520 acres, all inclosed with a substantial post and wire fence. The soil is rich and easily brought under cultivation. It yields abundantly and is unusually free from hail and summer frosts. It is plentifully supplied with wood and water, and natural meadows afford pasturage and hay. It is underlaid with coal where mines can be easily opened and economically operated. Good markets are at the door, and railways connect it with both oceans.

Population.—The population at the last annuity payments was 116.

Health and Sanitation.—The health of these Indians has not been good. The mild weather of the winter may have tempted them into unduly exposing themselves, and with constitutions enfeebled by tuberculosis they suffered as a result. An outbreak of whooping-cough carried off some children.

Occupations.—Grain-growing and stock-raising are their main dependence. They make money selling dry timber, hay and wild fruit. There was no fur this winter, which shrunk their revenues appreciably.

Buildings.—Individuals of the band built five good dwellings and one noticeably good stable. The logs taken out and the lumber sawn this winter give grounds for the belief that next year will find them all provided with good dwellings and outbuildings.

Stock.—As was intimated in last year's report might be the case, the number of calves born was less than usual, and the losses in grown stock diminished the herd. The increase from the brood mares, both in number and quality, was satisfactory. The present winter was mild and stock did well. The cattle were well fed and there is a surplus of hay left over for sale. Only one case of unauthorized killing of cattle is known to have occurred.

Farm Implements.—The supply has, thus far, met the requirements of the Indians.

Education.—When the children are of an age to attend school, they are sent to one of the residential schools for Indians, as there is no day school on the reserve.

Characteristics and Progress.—In the past the Indians of this band have been described as characteristically vacillating and infirm of purpose. If we judge them by their career this year, we may have to review, perhaps reverse our judgment. With almost no exceptions, the Indians have wrought diligently and purposefully, and have stuck to it manfully and tenaciously. They have stocked the saw-mill and are sawing the logs for 14 new houses and will have about 125,000 feet of lumber. Their requisition this year is for seed to plant 450 acres, as against 250 last year. They seem settled and determined, and there is little doubt they will accomplish what they have designed to do.

Temperance and Morality.—One of their number perished from exposure while intoxicated on New Year's day, and the circumstance itself and the proceedings arising from it have had a sobering effect on the drinkers of the band. Apart from

this, there is no improvement to report. In the matter of morality their conduct would be rated fairly good.

MICHEL'S BAND, NO. 132.

Reserve.—The reserve of this band lies some 7 miles west of St. Albert. It has an area of 15,732·25 acres, which is partly fenced. It is good farming land and carries enough timber to supply the needs of the band.

Population.—The population at last annuity payment was 94.

Health and Sanitation.—The health of the band has been fair. The character of their dwellings and their mode of living ensure them better sanitary conditions than fall to the lot of most Indians.

Occupations.—A number of the band follow hunting and trapping, and are attached to the band and belong to the reserve more for the purpose of drawing annuity than anything else. Those who reside on the reserve follow farming in all its branches.

Buildings.—Those whose homes were not disturbed by the recent sale of their lands have good houses and outbuildings. Those whose holdings were sold are preparing to build on their new selections and have taken out logs for the purpose.

Farm Implements.—All who applied for implements have been given a full equipment, and that of the best. They were paid for from the funds of the band.

Education.—They are all eager to have their families educated, and, as there is no day school on the reserve, the children are sent either to the boarding school at St. Albert or the industrial school at Dunbow.

Characteristics and Progress.—The Indians of this band have reached a stage in their evolution where a stranger would find it difficult to identify them as Indians among an assemblage of the neighbouring settlers. They speak English, dress becomingly, and have a general well-to-do air about them. Their houses are well kept and in general comfortably furnished. They were for a time handicapped for want of horses and implements to farm with, but now that the hindrance is removed, they will no doubt progress again. They ask for seed to sow nearly 400 acres, which indicates a rapid recovery from the temporary paralysis of the past few years. One of the band has purchased a steam threshing outfit, and, having a bank account, has met his payments at maturity, and possesses energy and thrift that will see him safely through.

Temperance and Morality.—In both these virtues they stand high for Indians.

ALEXANDER'S BAND, NO. 134.

Reserve.—This lies about 4 miles north of Michel's, and contains 17,691 acres. It consists of open, undulating prairie and rolling timbered country, most of it adapted for agriculture. It was all inclosed with a good post and wire fence this year.

Population.—At last annuity payments the population was 176.

Health and Sanitation.—There was more ill-health than usual this year. They remained all winter at the reserve, as there was no hunting and it is possible this had to do with it. Whooping-cough caused some deaths among the children.

Occupations.—Hunting and trapping are their avocations by choice. Inducements and arguments have done little hitherto to lead them to more farming and better management of their stock. The almost complete failure this winter in making a living by the chase has disposed them to the more settled pursuits, and they are asking to be given seed-grain and implements.

Buildings.—They built 12 cabins, and put up a few stables and corrals, and provided shelters for their wagons and implements. They are sawing about 100,000 feet of lumber at their own mill, and intend to use the product in building 17 new houses, enlarging or improving 10 more, and putting up 8 new stables.

Stock.—From their own funds 11 teams of good work horses were bought, and this enabled them to put up plenty of hay. The failure of the hunt kept them at home, so that the cattle were cared for better than usual and came through the winter well.

Farm Implements.—Eleven outfits, consisting of wagons, harness, mowers and rakes, were purchased for them before haying, and later, sleighs, ploughs, harrows and discs sufficient for their needs were provided.

Education.—There is now no day school on the reserve, but the boarding and industrial schools are always open to receive and anxious to have the children.

Characteristics and Progress.—This band still retains the characteristics of the nomad. Cunning, trained and tireless, they are usually successful in the chase, and in consequence hard to win to the monotony and drudgery of agricultural life. Their last winter's experience, however, furnished an argument as unwelcome as it was unanswerable in favour of the less favoured calling, and, as we have seen, its appeal does not appear to be wholly disregarded.

Temperance and Morality.—They are much given to drink. Morally, their conduct causes no disturbance within, and provokes no scandal without the band, and so may be rated fair.

JOSEPH'S BAND, NO. 133.

Reserve.—The reserve of this band is situated at Lac Ste. Anne, and has an area of 14,720 acres, three-fourths of it being covered with spruce and poplar timber, and the remainder being hay, prairie, and bottom land.

Population.—The population numbered 150 when last paid annuity.

Health and Sanitation.—There was an unusual amount of sickness among these Indians this winter, due, possibly, to their remaining in the shacks on the reserve when the hunt failed.

Occupations.—They are hunters and trappers, almost exclusively. They provide enough hay for their small bunch of cattle. The women cultivate the gardens in summer and feed the stock in winter.

Buildings.—Their houses, as might be expected, are of a very primitive kind. The Indians use them as shelters when they visit the reserve and abandon them when they return to the bush. They have sheds and corrals for their cattle.

Stock.—There have been two discouraging winters in succession, and it will take some time to restore their faith in the business and repair the losses in the herd.

Education.—Naturally, education does not enter into their scheme of things. Day schools have been tried, and failed, and boarding schools have no attractions.

Characteristics and Progress.—Their characteristics are those of the nomad and the hunter. This was a lean and hungry year for them. The fur-bearing and game animals disappeared from their accustomed haunts, and there was no call for labour, neither was there sale for timber. Under these circumstances, it became imperative to ration them till spring would come.

Temperance and Morality.—They are addicted to the use of liquor. They are believed to be moral.

PAUL'S BAND, NO. 133A.

Reserve.—The reserve of Paul's band is situated at the east end of White Whale lake, and contains 20,378 acres. It was inclosed with a good post and wire fence this year. It is generally well suited for farming and grazing. Natural meadows and good grazing land occupy about one-fourth of it. The rest is covered with poplar and spruce timber. Both the Canadian Northern and the Grand Trunk Pacific railways will cross the reserve. Their advent and operation will make the marl deposits known to exist here very valuable.

Population.—At last annuity payments there were 153 Indians in the band.

Health and Sanitation.—The health of these Indians was good. Neither epidemic nor contagious disease has visited them. They are living in more commodious houses and under better sanitary conditions than in the past, and improvement in their health is following.

Occupations.—Putting up hay for their stock, working for the neighbouring settlers, clearing right of way for the railways, and hunting and fishing afford them occupation. Now that conditions are changing, they are looking to resuming farming again and are asking for seed for the coming season.

Buildings.—They are well provided with both dwellings and outbuildings.

Stock.—They provide well for and give good attention to their stock. This winter was mild and stock came out well.

Farm Implements.—As for some time little farming has been done, the equipment, though small, has been adequate for their needs. Whenever there is a revival, their own funds will provide implements as fast and in as great measure as required.

Education.—There is no anxiety evinced by the parents for the education of their children. The reserve is pretty well canvassed by the Red Deer industrial school for pupils, and as many as can be persuaded to do so send their children there, there being no day school at the reserve.

Characteristics and Progress.—This is a tractable, easily managed lot of Indians. They are generally industrious, and while not going very fast, are gaining a little and headed in the right direction.

Temperance and Morality.—While they are watched as they are at the reserve, they keep sober; when away from surveillance, they are prone to indulge to excess. Their reputation for morality is fair.

GENERAL REMARKS.

Mr. Gibbons resigned as agent in June, and the late Mr. McKay, who was appointed to succeed him in November, died before entering on his duties. Mr. Bard retired in May, and was succeeded by Mr. Harry Hope as farmer for Alexander's band. The late Dr. Tierney, who was medical officer for the agency, died in February.

The new office and store building was finished and occupied. Repairs costing $2,100 were made to the houses of the agent and clerk, the stables were repaired, an implement shed constructed, an ice-house and a refrigerator for keeping beef provided, and the pasture was enlarged to 1,000 acres.

I have, &c.,

WILLIAM BLACK,
In charge of the agency.

PROVINCE OF ALBERTA,
HOBBEMA AGENCY,
PONOKA, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report on the affairs of this agency for the fiscal year ended March 31, 1908.

Reserves.—Hobbema agency is prettily situated on the left bank of the Battle river, about 10 miles down from the town of Ponoka, and 5 miles south of Hobbema siding, on the Calgary and Edmonton railway. This agency comprises the following

reserves, which adjoin and practically form one large reserve, with an area of nearly 100,000 acres. The Calgary and Edmonton railway runs through the reserve diagonally for 15 miles.

SAMSON'S RESERVE, NO. 137.

About a quarter of a mile south of Hobbema siding, is the north boundary line of Samson's reserve. This reserve extends easterly to the Battle river, southerly about 4 miles and westerly about 3 miles, and contains 39,360 acres.

ERMINESKIN'S RESERVE, NO. 138.

This reserve, which includes that of Louis Bull's, covers an area of 39,360 acres. It has the north boundary line of Samson's reserve for its southern boundary, and extends northerly to the 46th township line.

THE MONTANA OR BOBTAIL RESERVE, NO. 139.

This reserve lies to the south of Samson's and the Battle river, and extends southerly to a parallel line which brings the southwest corner to within 3 miles of the town of Ponoka. The reserve comprises 20,160 acres.

REMARKS APPLYING TO ALL RESERVES.

The surface of these reserves consists of rolling prairie, swamps and lakes, with a small quantity of scattered timber of sufficient size for cutting into lumber, and for building purposes. At the northwest corner of the reserve bordering on Bear's Hill lake, and at the opposite side of the reserve at the southeast corner bordering on Battle lake, are extensive hay meadows.

Tribe.—Nearly all these Indians are Crees.

Population.—At the annual payments of annuities there was a total of 745 souls.

Health and Sanitation.—The general health of these Indians has been fairly satisfactory during the year. Influenza was very prevalent throughout the winter, and its victims chiefly children. Several who were afflicted with tuberculosis also succumbed to the disease. After the winter was over, all the garbage which accumulated around the dwellings was gathered up and burned. In the fall of the year the houses were lime-washed inside and outside. These Indians continue the old custom of living under canvas during the summer, and as they are frequently changing their localities, it is probably more conducive to health.

Dr. Robertson, of Wetaskiwin, is the medical attendant when required, and promptly responds when any call is made for his services.

Occupations.—The resources and occupations of these Indians have been varied and numerous. Mixed farming and stock-raising are the two main resources. The fishing at Pigeon lake was a source of income to quite a number of families for a portion of the year. Others found occupation and fair remuneration near the reserves by clearing bush-land for settlers. A few engage in hunting, especially during November; the catch of fur was good and prices high. The sale of 625 tons of hay by individual Indians, in the towns of Ponoka and Wetaskiwin, contributes largely towards their support.

Buildings.—A number of new houses and stables have been built this year, and many of the old ones were repaired and improved.

Stock.—The Indians possess a fine herd of cattle, and there is an abundance of good pasture and grass on the reserve. The winter season was unusually favourable, and the stock came through in good condition.

Farm Implements.—The Indians are fairly well equipped with farm implements, and this year added the following to their supply: 7 wagons, 6 bob-sleighs, 3 mowers, 1 horse-rake and 4 sets of harness. This machinery they purchased out of their earnings.

Education.—The boarding school under the auspices of the Roman Catholic mission, is situated on Ermineskin's reserve, near Hobbema siding. This institution continues in its admirable work; the girls get a thoroughly practical training in all domestic work, and during the year satisfactory progress was made by the pupils in their educational studies. The school is well equipped, and has fifty pupils enrolled.

The two day schools under the management of the Methodist mission have been closed since last June.

Characteristics and Progress.—The Indians of this reserve are peaceable and law-abiding. Fifteen new houses and three stables were built during the year, and several old rail fences were replaced with barb-wire. A number of Indians have been occupied this winter getting out saw-logs and hauling them to the mill to be cut into lumber for their own use in improving their houses. The area under cultivation was increased nearly 200 acres, but owing to the unfavourable season and early frosts, the crops here were a partial failure.

Temperance and Morality.—There were a few cases of intemperance during the year, and in all cases the offenders were punished, and the persons supplying the liquor prosecuted. These Indians are fairly moral.

General Remarks.—The following improvements were made at the agency headquarters this summer, all the frame buildings were painted and a new picket fence placed around the agency buildings; the agent's house, office, and storehouse were reshingled, and a new cattle corral was built.

I have, &c.,

GEO. G. MANN,

Indian Agent.

PROVINCE OF ALBERTA,

PEIGAN AGENCY,

BROCKET, March 31, 1908.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—I have the honour to submit the annual report of this agency for the fiscal year ended March 31, 1908, together with the usual statements of agricultural statistics and inventory of government property.

Reserve.—The Peigan reserve is situated on the Oldman river, west of Macleod. Its form is almost square, and its area 181⅝ square miles or more than 116,000 acres. In addition to the reserve proper, the Indians have, in the Porcupine hills, a timber limit containing 11½ square miles. The Crowsnest Pass railway passes through the reserve from northwest to southwest corners; there being 15 miles of track and 3 sidings; the first west of Macleod is the Peigan siding, where there is a substantial section-house and a good stock-yard with every facility for shipping. Chokio is the next, nicely situated about 5 miles from Brocket station; this latter is situated on the southwest corner of the reserve; the station is a good building and the Canadian Pacific Railway Company has an agent at this point. T. Lebel & Company have a large warehouse, the Alberta Pacific Elevator Company an elevator, and there is a large raised platform for the farmers to load direct into the cars. Three different firms have been buying baled hay, oats and wheat this season, and, as this is the most

convenient point for most settlers to the south—in what is called the Kootenai and Halifax Lakes country—to dispose of their hay and grain, a large volume of business has been done in the past season. It is to near this point that the agency buildings have been removed.

The place where these Indians have commenced farming is about two miles from the station, and the grain can be delivered direct from machine to elevator, warehouse or cars, if so desired.

The reserve is composed of undulating prairie and untimbered hills, all being suitable for grazing purposes, with considerable area of good farming land.

Population.—The population of the reserve is 470 souls. Details in connection with this subject are found in the tabular statement.

Health and Sanitation.—The health of the band during the past year has been satisfactory. There has been an absence of any infectious diseases. Those cases with fatal results have in the larger degree been caused by tubercular disease. In the spring there is a general cleaning up around their houses and a general supply of lime used, the rubbish burned; and during the summer they are all under canvas.

Occupations.—The cattle and horse industries are the principal occupations, as the natural facilities and more particularly the soil are better adapted for stock-raising than grain, at the same time we have considerable area of what I consider good wheat soil. Our farming last year, though on a limited scale, gave very satisfactory results, and the Indians interested were highly pleased ; the result is that I expect to increase the acreage this year.

Buildings.—The frame houses are principally of the one storey style or cottage, substantially built and neat in appearance, and usually clean; though a number of the Indians are still living in the log and mud huts. There has been some improvement to buildings during the year.

Stock.—Owing to the favourable conditions of the past season, the range stock commenced the winter in exceptionally good condition, and the unusually mild winter has made the extra expense of feeding unnecessary. The beef stock is in almost as good condition as during the summer months, and there have been practically no losses from disease or other causes. Owing, I presume, to the severe weather during the winter of 1906-7, the calf crop of the past season was below what it otherwise should have been.

Education.—There are two boarding schools in connection with the reserve, one under the auspices of the Roman Catholic Church, situated within the reserve limits; the other in the hands of the Anglican Church, situated off the reserve near the west and south limits. The aggregate number of Indian children attending these schools is 54. There is a lack of interest shown by the parents with reference to sending their children to school. However, the pupils who are attending the different schools are making good progress.

Progress.—I can safely say that a noticeable advance along all lines has been going on for the past year. The earning facilities for those willing to work have more than doubled. The class of horses they have been selling have advanced at least 25 per cent over last year, and they realized from this source a considerable revenue; from sales of beef, $2,509.16, and a large amount from miscellaneous earnings outside of the reserve, such as working for farmers, ranchers, threshing outfits, work in connection with their saw-mill and from their grain. Besides purchasing and paying for everything themselves in the way of wagons, mowers, rakes, harness, saddles, lumber, shingles, doors, windows, house furniture, small tools, and general repairs to their wagons, harness and machinery, they have supported themselves largely in the way of rations, thereby reducing the gratuitous food-supply. The reduction in the beef-issue over last year is 16 004 pounds. With the exception of the aged and infirm, who are well taken care of, the band is practically self-supporting. Taking them as a whole, they are honest and law-abiding, and there is no question of a doubt that they are advancing rapidly.

Temperance and Morality.—These Indians are moral in their habits; and I am glad to say that there have been but few cases of intemperance during the past year.

I have, &c.,

E. H. YEOMANS,

Indian Agent.

PROVINCE OF ALBERTA,
SADDLE LAKE AGENCY,
SADDLE LAKE, April 16, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the affairs of this agency for the fiscal year ended March 31, 1908, with statistical statement, and inventory of government property under my charge.

SADDLE LAKE BAND, NO. 125.

Tribe or Nation.—These Indians belong to the Cree nation.

Reserve.—This reserve is situated in townships 57 and 58, ranges 10, 11, 12 and 13, west of the 4th meridian, and including Blue Quill's reserve, band No. 127, adjoining it to the west, has an area of 82,560 acres. The north and west portions of the reserve are rolling prairie, while the south and east are fairly level. Small clumps of poplar abound throughout the whole reserve, while to the south, along the banks of the Saskatchewan river, a supply of tamarack and fair-sized spruce is obtainable. Saddle Lake creek, which has its source in Saddle lake, runs through the centre of the reserve, from north to south, and empties into the Saskatchewan river. The reserve is well adapted for either farming or stock-raising.

Population.—The population, including Blue Quill's band, No. 127, is 266.

Health and Sanitation.—The general health of these Indians has been good during the year. The usual sanitary precautions were carefully carried out.

Resources and Occupations.—The chief occupations followed by these Indians are farming and stock-raising, but the majority of them augment their income by freighting, trapping, and working for settlers in the vicinity of the reserve.

Buildings.—A number of these Indians have good dwelling-houses, with shingled roofs, and warm comfortable stables for their stock. The majority of them wash the walls with white mud, which gives the buildings a neat, tidy appearance.

Stock and Farm Implements.—The stock belonging to these Indians wintered well, and is in good condition. These Indians are fairly well equipped with farm implements, wagons, sleighs, and machinery.

Education.—A boarding school, under the guidance of the Roman Catholic Church, is situated on the western portion of the reserve. Deep interest in the welfare of the children is manifested by the staff of this school, and satisfactory progress has been made during the year. A day school is situated on the Saddle Lake or eastern portion of the reserve, and is under the management of the Methodist Church. The majority of the children live too far away from the school to attend regularly; however, good progress has been made during the year by those who were able to attend.

Characteristics and Progress.—The Indians of this reserve are law-abiding, intelligent and industrious, and are making very satisfactory progress.

Temperance and Morality.—One case of intemperance occurred on this reserve during the year. The general morality of these Indians is good.

JAMES SEENUM'S BAND, NO. 128.

Tribe or Nation.—This band belongs to the Cree nation.

Reserve.—This reserve is situated on the eastern shores of Goodfish and Whitefish lakes, about 30 miles north of Saddle lake, in townships 61 and 62, ranges 12 and 13, west of the 4th meridian. The greater portion of it is not suitable for farming, being broken by steep hills, swamps, and thick bush, but as it is singularly immune from early frost, in the fall, a limited quantity of good wheat, and vegetables of various kinds, have been successfully cultivated. The lakes are well stocked with fish.

Population.—The population of this reserve is 320.

Health and Sanitation.—The general health of these Indians has been good during the year. The usual sanitary precautions were carefully carried out.

Resources and Occupations.—Stock-raising and farming are the chief occupations followed by this band, but the majority of them add to their incomes by hunting, fishing, and trapping.

Buildings.—The Indians of this band have comfortable dwelling-houses, and good warm stables for their stock.

Stock and Farm Implements.—The stock on this reserve wintered well, and is in good condition. This reserve is well equipped with farm implements, machinery, wagons and sleighs.

Education.—There are two day schools on this reserve, both under the auspices of the Methodist Church; they are situated, one at the north and one at the south end of the reserve. The attendance at both has been good, and satisfactory progress has been made by the pupils during the year.

Characteristics and Progress.—These Indians are law-abiding and fairly industrious, and are making some progress.

Temperance and Morality.—During the year three Indians belonging to this band were found guilty of being intoxicated; two of the cases occurred while the Indians were working on the roads for a contractor. A heavy fine was imposed on the person who supplied the liquor; he has appealed the case to the Supreme Court. The general morality of these Indians is fairly good.

LAC LA BICHE BAND, NO. 129.

This band numbers 12 persons, they are half-breeds, and make their living by hunting, trapping, fishing, and working for the Hudson's Bay Company.

CHIPEWYAN BAND, NO. 130.

These Indians eblong to the Chipewyan tribe. They live in the vicinity of Heart lake, about 100 miles north of Saddle lake. They number 84 persons. They make their living chiefly by trapping, hunting and fishing; but, as game was very scarce last winter, the department had to assist them with food.

BEAVER LAKE BAND, NO. 131.

These Indians belong to the Cree nation. They live at Beaver lake, which is about 15 miles east of Lac la Biche. They make a living by hunting, trapping and fishing; but as game and fur are getting very scarce, they are anxious to try farming. In order to give them a chance to do so, the department has supplied them with a few head of cows and oxen, and some farm and garden implements, which will no doubt be supplemented by more, if they show an honest effort to take up the work seriously. They number 105 persons.

GENERAL REMARKS.

A new pony planer and matching-machine was supplied by the department to this agency, this year; this will be of great value to the Indians, as the high prices that obtain for lumber put it beyond their power to purchase it. It will also mean a saving to the department, and make it possible to erect what buildings are required at the agency headquarters and farms, at a minimum cost. A new house was built for the interpreter; but I regret to say that the other new buildings which I contemplated putting up, and which were estimated for, not having been finished, as, owing to the difficulty of hiring a plasterer and stone mason, at a reasonable cost, the winter set in before a start could be made. However, all the material is on the ground, and I look forward to completing the work early this summer. A tent hospital for Indians was established here by the department during the year. It consists of three double-walled tents. The staff consists of Dr. Aylen, of Fort Saskatchewan, in charge, a trained nurse, and an Indian boy to do chores. It is situated on the northeast shore of Saddle lake, about 4 miles from the agency headquarters. The equipment is very complete, and the attention given by the staff to their duties is creditable. So far the Indians have not patronized it much, but no doubt when they realize the benefits such an institution means to them, they will appreciate more fully the efforts put forth by the department for their welfare.

I have, &c.,

J. BATTY,

Indian Agent.

PROVINCE OF ALBERTA,
SARCEE AGENCY,
CALGARY, June 25, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report for the fiscal year ended March 31, 1908, on matters in general connected with the Indians of the Sarcee reserve.

Tribe or Nation.—These Sarcees originally belonged to the Beavers from the far north. They came to this country some three hundred years ago.

Reserve.—This reserve lies southwest of the city of Calgary, and comprises township 23, ranges 2, 3 and 4, west of the 5th meridian, and contains an area of 69,120 acres. The land is of first-class quality, generally rolling, and as a stock range is unequalled in the province. In the eastern part of the reserve the land is more level and is capable of producing winter wheat and other cereals.

Population.—The population of the Sarcee band at last treaty payment (November, 1907) was 203.

Health and Sanitation.—The general health of the Indians has been good. The boarding school was, however, visited by an epidemic of chicken-pox last winter and was under quarantine for four months.

Occupations.—Stock-raising, farming and working for settlers in the vicinity of the reserve are the chief occupations of these Indians.

Buildings.—In many cases the buildings are comfortable and in fair repair. Some improvements were made during the year.

Stock.—The Indians take to this industry better than any other, and in many cases are increasing their herds and becoming better off. All stock on the range came through last winter in good condition, and the losses were merely nominal.

Farm Implements.—They now supply out of their earnings all their own machinery and implements, and, as they are owned by themselves, they seem to take better care of them.

Education.—There is a boarding school on this reserve under the auspices of the Church of England with Venerable Archdeacon Tims as principal, Mr. Percy E. Stocken, assistant principal, and Miss B. Crawford, matron, with eleven pupils on the roll.

The Calgary industrial school, situated some 6 miles away, where many of the pupils graduated, was closed recently.

Characteristics and Progress.—The Sarcees speak a distinct language from the other southern Indians, and mix but little with them, occassionally ; however when there is a sun-dance on or something of this nature, they will nearly all visit the neighbouring tribes to practice their pagan rites, which are still very dear to them.

Their language has a peculiar guttural sound and is not easily learned by the whites, in fact very few outside of the tribe can speak it. Many of their manners and customs are also different from those of other southern Indians.

Progress is noticeable among a few, during the year. Some appear anxious to succeed, as is evidenced by the increase of their little bands of cattle and well cultivated fields of grain and roots. If they only practised more independence and economy, and were not always on the lookout for help from the government, in the way of getting free rations, I have no doubt many would in a short time be in a better position and no longer a burden on the government.

I am glad that some advancement is noticeable along these lines, as rations of flour and beef have been cut down during the past ten years by more than one-half; before long I hope to see no free food issued to any, except the old and those who are destitute through illness and old age.

Temperance and Morality.—As the towns in the vicinity of the reserve are increasing in population and liquor is more easily procured by the Indians, intemperance is no doubt increasing, and some other means will have to be used to cope with this evil.

If a guard-room were established on the reserve with a few police, I am of the opinion that very soon there would not be so much to complain of in this respect. It is extremely difficult now to get a conviction against those who supply it.

In morality their conduct is fair.

General Remarks.—The reserve being fenced with a wire fence of three strands 48 miles in length, settlers are still allowed to pasture their live stock within its boundaries on paying a fee of $2 per head. This brings in quite a revenue, and my stockman and herders are paid out of this fund.

The question of surrendering a portion of the reserve by the Indians is still a prominent one, many of the young men being anxious to part with some of it, while the old men, through superstition altogether, are still averse to the project.

I have, &c.,

A. J. McNEILL,

Indian Agent.

PROVINCE OF ALBERTA,
STONY AGENCY,
MORLEY, April 9, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908, together with tabular statement and inventory of government property.

Reserve.—The Stony reserve, comprising 69,720 acres, is situated in the foot-hills of the Rocky mountains about 40 miles west of Calgary on the line of the Canadian Pacific railway, and is divided by the Bow river, Peter Wesley's band residing on the north, Moses Bearspaw's and Jonas Two Youngmen's bands on the south side of the river. Morley station is about half a mile from the agency headquarters.

With the exception of the southeast corner, nearly all the reserve is hilly and gravelly, a great portion being covered with timber.

Tribe or Nation.—These Indians are Stonies, a branch of the Sioux.

Population.—The population is as follows: Bearspaw's band, 251; Peter Wesley's, 277; Jonas Two Youngmen's, 112; a total of 640 souls.

Health and Sanitation.—The health of the Indians has been fairly good, excepting of course scrofula and consumption, some few succumbing to the latter disease.

The hospital, with a professional nurse in charge and under the superintendence of Dr. Lafferty, is doing good work, but it is not appreciated by the Indians as it should be for the welfare of their families.

Sanitary precautions were taken at all Indian houses, and all garbage removed and burnt.

Occupations.—These Indians raise cattle and horses, cut and deliver logs to the saw-mill, load fire-wood, posts and rails on cars at Morley station, haul wood to Kananaskis, Lime Kilns and Exshaw, besides labour at outside points.

These Indians were as usual away hunting last fall. From the wood industries alone their earnings amounted to $10,251.50, nearly all of which they received in cash. Their total earnings from all sources amounted to $25,748.50, besides amounts earned down south during the year which are not obtainable.

Buildings.—Several buildings have been erected and repaired; they are generally clean and comfortable.

Stock.—Stock-raising is one of the principal industries on this reserve. Cattle and horses are doing well. Some good colts have been raised and a great improvement is being seen by the introduction of Hereford bulls the last two years. Owing to the heavy snow-storm in the latter part of April, 1907, quite a loss of cows and heifers calving occurred.

Farm Implements.—The Indians have purchased 5 wagons, 3 mowers, 9 ploughs, 5 sets bob-sleighs and 8 sets of double harness, besides stoves and useful articles for their households.

Education.—There is a boarding school on the outskirts of the reserve, having an average attendance of 30, who are making fair progress and who are in the best of health, all the unhealthy ones being sent to the hospital, where they are receiving every attention.

Characteristics and Progress.—These Indians are advancing as shown in many ways, especially by the amounts they are earning, which is making them more self-reliant; they are law-abiding, better off, and spend their money judiciously.

Temperance and Morality.—They are temperate, no cases of intemperance coming to my notice; but their morals are not all they should be after the long number of years they have been under the charge of missionaries.

I have, &c.,

T. J. FLEETHAM,

Indian Agent.

PROVINCE OF ALBERTA,

ALBERTA INSPECTORATE,

GLEICHEN, April 22, 1908.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—I have the honour to submit my annual report on the work within this inspectorate for the fiscal year ended March 31, 1908.

PEIGAN AGENCY.

This agency was inspected during January, 1907, but no thorough inspection has since been made. I have, however, frequently visited this point during the fiscal year to do special work and this work I shall briefly review herein. Mr. J. H. Gooderham filled the position of agent here for a little over three years and then about May 1, last, he was transferred to a like charge over the Blackfoot band of Indians. Mr. E. H. Yeomans at the same time was transferred from the Oak River Sioux agency in Manitoba, to fill the office vacated at the Peigans by Mr. Gooderham. The transfer of the Peigan agency from Mr. Gooderham to Mr. Yoemans was consummated by me on April 30, last, and the customary transfer documents were forwarded on to the Indian Commissioner at that time.

The agency headquarters was located on the north side of the Oldman river during the early period of the settlement of these Indians on their lands, and since that date the conditions have changed in many respects, and, as the buildings were becoming dilapidated, it was thought more prudent to transfer the best of these buildings to a point on the south side of the river, and conveniently near to one of the sidings on the Crowsnest branch of the Canadian Pacific railway than to erect such new buildings as were required at the old site and repair the best of the others. In accordance with this programme, I was directed to look over that portion of the reserve adjacent to the line of the railway and to recommend a location for new agency headquarters. The first selection for the new agency was made near Chokio siding, which is within one mile of the centre of the reserve. A test for water was immediately made at this selected site, and with barren results. A point just southerly from Brocket station was then decided upon, where there is abundance of good water and, moreover, near to the best farming and meadow land within the limits of the whole reserve. New residences were erected here for both the agent and the clerk, and a few of the buildings from the old site were removed and rebuilt on the new site near Brocket. The office and storehouse building was pulled down, removed and rebuilt, under tender and contract, during March, last, and now the Peigan agency headquarters is within 250 yards of Brocket telegraph office and station and is connected by telephone with most of the important points in the province. There yet remains a good deal of work in connection with the final completion of a few of the buildings, fencing, &c., but hopes are entertained that all of this work will be entirely completed within a few months and that no further expenditure of money will be necessary on

this reserve for agency buildings for many years to come. A good deal of my time was taken up during the fiscal year in connection with the transfer of this agency and with the buildings referred to herein.

The loss of cattle on this reserve during the winters of 1905-6 and 1906-7 is likely soon to be seriously felt, and the indications are now that the old-time custom of providing a meat ration for these Indians will again have to be resorted to. Less than 3 years ago these Indians held nearly 3,000 head of cattle, and their herd was gradually increasing and the free meat issue decreasing in a corresponding manner, and simply for the reason that many of these Indians had cattle of their own raising and were in a position to provide themselves with meat from their own herds. During the calendar year 1902 there was 216,416 pounds of beef gratuitously issued to the Indians of this reserve, and during the calendar year of 1906, the free beef issue was reduced to 64,564 lbs. Now there are only about 1,100 head of cattle owned by these Indians, and, owing to the heavy loss of cows during the winter of 1905-6 and 1906-7, there was a small calf crop in the spring of 1906-7-8, and in consequence there are very limited numbers of steers maturing for beef requirements the next and following years. Moreover, the condition of the range is such at the present time that it would not be prudent to place more stock on this reserve with the view of providing for the meat requirements of these Indians until such time as their own herd again naturally increases to the number it was during the summer of 1905. There is neither grazing nor prospects for a sufficiency of hay to hold more stock than there is now on this reserve.

There is a growing disposition on the part of the young men of this band to increase the farming operations and to have a portion of the reserve subdivided so that individuals may be allotted small subdivisions and then confine their farming operations to these divisions. Although the crop of last season was not a strikingly heavy one, the Indians were fairly satisfied with the results and are anxious to increase the acreage as rapidly as they can.

BLACKFOOT AGENCY.

Mr. J. H. Gooderham was installed as agent here last May, and since then Mr. J. L. Laycock resigned the position of farmer at farm 20B, and was succeeded by Mr. David Brereton, who is not only a practical stockman, but an all-round handy man and, moreover, not the 'wheel-barrow' kind so frequently met with and who require lifting and shoving to be of any use to an agent. I started an inspection of this agency and reserve, but was called away to take up other duties; I hope, however, to complete the work already started within a reasonable period.

The loss of cattle here was considerably greater than I thought when I wrote my last annual report—May 30, 1907. The winter last past was an exceptionally favourable one for stock and I am informed that the calf crop promises to be above the average this season. It will, however, take some years to place these Indians where they were before the hard winter of 1906-7 as regards their stock holdings.

A discouraging feature in the management of Indians of late years, at this and at many other of the reserves within this inspectorate, has been the inducements held out at cities, towns and villages to the Indians to leave their homes and their work to take part in parades, old time dances, &c. These mirth-loving people will leave their haymaking or any other important work for weeks at a time and travel from town to town to take part in horse and squaw races, parades and like diversions, and it goes without saying that men, women and maidens do not return home, on the whole, imbued with a greater regard for ethical conduct than when they left their homes to take part in the beguiling amusements referred to herein.

SARCEE AGENCY.

This agency was inspected during the month of July, last. The staff then included: A. J. McNeill, agent; G. Hodgson, farmer; Otter, choreman; John One Spot, stockman; Billy Little, Tony, and David One Spot, herders.

The entire herd of cattle, between 700 and 800 head, is under the direct charge of John One Spot, who is a member of the band and a graduate of the reserve boarding and the Calgary industrial schools, and Mr. McNeill assured me that he was particularly attentive to his duties and that he filled the position creditably to himself and to Mr. McNeill's satisfaction. I was so struck with the completeness of his monthly diary that I removed one from the office file and forwarded it on to the Indian Commissioner.

This reserve comprises three whole townships of land, and it is fenced, with a post and wire fence, on the entire boundary.

In addition to the herds of cattle and horses owned by the Indians, there were 1,348 head of cattle and horses, owned by whites, grazing on these lands and for which $2,696 was collected for the twelve months previous to July 1, 1907. This is cited as evidence that these Indian lands are utilized; the Indians think that it is more productive for the weal of the district than is a great deal of the land now in the hands of the whites and that it would be more consistent if some of the referred to land-holders would utilize the land now under their control than to be agitating for the lands the Indians reserved for their own welfare.

The buildings erected here years ago were put up on wood block foundations, and in consequence the lower timbers of several of these buildings have decayed and now some of them are not reparable, notably the house occupied by the agent and an unoccupied cottage which was occupied by a clerk some ten years ago.

About 10 acres of land was seeded to winter wheat during the autumn of 1905, and a fairly good return was secured at the harvest of 1906. Mr. McNeill failed to secure a machine, and neither this wheat nor the oats grown in the season of 1906 were threshed. The oats were fed in the sheaf during the hard winter of 1906-7, and the wheat stack was standing in the stack-yard when I made the inspection of the agency and the reserve. The crop of last season promised to be a fairly good one with the exception of the garden stuff and some pieces of grain, which bore evidences of damage from gophers.

Individual Indians had made a number of improvements to dwellings, stables, and fencing, and had broken up some new land, too.

On the whole, I thought these Indians had made reasonable progress between the dates of the two last inspections and that there were few reasons for fault-finding with the management or with the conduct of the staff generally.

SADDLE LAKE AGENCY.

This agency, together with the reserves in connection therewith, was inspected during the latter part of August and the early part of September last, and I also made a short visit, to look into some special matters, to the Saddle and Whitefish Lakes reserves during last March.

The staff in August last comprised: J. Batty, agent; J. W. Carrol, clerk; H. J. Niblock, farmer at Saddle Lake; S. Whitford, interpreter, blacksmith and carpenter at the agency, and Peter Erasmus, assistant farmer at the Whitefish Lake reserve.

Mr. Peter Tomkins did hold the position of farmer, engineer, &c., at the Whitefish Lake, but a few weeks previously to the period of my inspection he had resigned and departed. About the first of October Mr. Vincent Smith was appointed to the position vacated by Mr. Tomkins, and when I was at Whitefish Lake in March last, Mr. Smith was in direct charge of this reserve.

A tent hospital had been erected on the northeast shore of the Saddle lake during the previous July, and this hospital was under the supervision of Dr. Aylen, of Fort Saskatchewan, with Mrs. Smith in direct charge. Mrs. Smith has since resigned, and a Miss Mackenzie, a certificated nurse of three years' training in the Shields-Hall hospital, has taken her place. This hospital has not been patronized to a very great extent by the Indians.

A new frame house for the use of the interpreter has been erected near the agency headquarters, and a good deal of material has been provided towards the erection of a new house for the farmer and the improvement of the house occupied by the agent. It is intended to remove the agent's house about 50 yards, where the ground is higher, and there place it on a substantial stone foundation and otherwise improve it.

The spring of 1907 opened too late in the opinion of the agent to risk much land in spring wheat, and Mr. Batty's view in this regard proved to be well founded, for the 129 acres seeded to spring wheat was badly frozen and in fact I do not think that any spring wheat ripened in that locality last season. I have urged the agent to test the possibilities of winter wheat growing on the reserves under his charge, and I have his assurance that a few acres will be seeded to this variety of wheat next August.

About 50 M. feet of lumber had been sawn during the fiscal year and previously to my inspection, and when I was at the agency during March preparations were being made to convert all the logs on hand into lumber.

No water-supply has yet been assured at Farm A, Whitefish Lake reserve, and the bulls and other stock had to be taken two or more miles daily to water, and the water required for domestic purposes in the farmhouse had to be hauled from the lake, which is about three miles distant. When I was at this farm last March, I learned that a three-inch auger and about fifty feet of iron tubing had been secured, and that as soon as the frost should be out of the ground a test well would be bored in the hope that a supply of water would be found near to the farmhouse and stable, both of which were newly erected about three years ago.

I noticed a few new log-walled Indian dwellings in course of construction on the two reserves. These houses had shingle roofs, and when completed they will be comfortable and creditable Indian dwellings. Mr. Augustus Steinhaur had a well kept garden, in which there was a season's supply of turnips, carrots, onions, potatoes, &c.

STONY AGENCY.

Morley, a station on the main line of the Canadian Pacific railway, about 42 miles westerly from Calgary, is within the Stony reserve.

This agency was inspected during portions of the months of October and November and the staff then comprised: T. J. Fleetham, agent; W. B. Smith, clerk; John Grant, farmer and stockman, and John Brass, interpreter. In addition there was a staff of three employed in and about the hospital, namely: Miss Lang, nurse; Miss Gibson, cook, and Mr. C. Christianson, handy man. The salary of Miss Lang, however, is paid by the Women's Missionary Society of the Methodist Church.

This hospital then had six patients, and it had been in operation just twelve months. The average number of patients for the entire year was 5¼. About $4,000 had been expended on buildings and equipment, and about $2,000 for operating it during the twelve months referred to, including the sum of $400, the salary of the medical officer, Dr. Lafferty. The buildings, equipment and premises were in good order, and there was a continuous flow of the best of spring water throughout the building. A detailed statement of the equipment on hand, supplies purchased and consumed, &c., was made up and forwarded to the Indian Commissioner together with a report on the institution.

The Indians of this band erected two new dwellings during the fiscal year, repaired a number of other buildings, and purchased a number of implements and tools out of their earnings. They had earned through the wood industry alone $3,416.55 during the previous twelve months, besides which considerable sums had been earned working about the lime kiln at Kananaskis and in other directions, and when they surrendered 1,000 acres of land adjacent to the Horseshoe falls every man, woman and child had been paid $5 for their interest therein, and besides, they, like all other annuity Indians, had received $5 per soul, so that in one way and another these Indians handled con-

siderable sums of money. During the twelve months previous to October 31, they turned into the abattoir 49 beef cattle, and during the twelve months prior to June 30, 43,078 lbs. of beef had been issued to the aged and infirm, and on October 31, individual Indians had been loaned 966 lbs. of beef, and other individuals had then 6,142 lbs. to their credit. They own in the neighbourhood of 800 head of cattle, and probably about the same number of very good native horses. The loss of cattle during the hard winter of 1906-7 was about 30 per cent of their entire holdings.

The general improvements on the reserve during the year between the inspections were about as follows: the erection of about five miles of post and wire fencing, the breaking of 25 acres of new land, the erection of a calf-shed on the north side of the Bow river, hills had been graded and culverts placed over boggy places so that hay could be conveniently hauled from far away meadows to where it would be required during the feeding season, a new house had been erected for the use of the clerk, an automatic water service was provided in the agent's house, and minor improvements here and there about the buildings and throughout the reserve. The Canadian Pacific Railway Company had, too, completed a good fence on both sides of its line through the reserve—easterly and westerly.

HOBBEMA AGENCY.

This agency was inspected during the latter part of December and the early part of January, and the staff then consisted of: G. G. Mann, agent; A. W. Perry and T. W. Lucas, farmers; G. J. Ferguson, blacksmith, sawyer, carpenter, &c.; Donald Whitford, interpreter; Sammy Crier, mail-carrier, and David Baptiste, general labourer. Miss Mann did all the clerical work, although not permanently employed.

The agency headquarters are on the Battle river and about 10 miles distant from Ponoka. The house that the agent occupies is a frame one, but without a stone foundation or a frost-proof cellar. It was erected about 20 years ago and a new small frame house was erected a year ago for the use of Mr. Ferguson. The office, storehouse, clerk's house, interpreter's house, blacksmith-shop and stables are all log buildings, and were built about 23 years ago without proper foundations and are now in a dilapidated condition. Farmer Lucas occupies a small and cheaply constructed frame house located south of the Battle river; and Farmer Perry occupies a dilapidated frame house without a foundation other than decayed timbers and the earth. The stables in connection with this farm, No. 18 A, are of log and were erected many years ago and are now falling down.

During the last calendar year the Indians put up 15 new dwellings, 3 new stables and a new granary.

There were 422 logs turned into lumber and shingles last season at the mill operated at the river and near to the agency. This is a water-power mill, but the timbers in the head and tail races are now so decayed that I question whether this power can again be used unless the timbers are renewed, and the power is not sufficiently reliable to make such an investment profitable.

There was only 574 bushels of wheat threshed from 39 acres and it was of a poor quality. The wheat grown on 56 additional acres was not worth threshing owing to the heavy frosts before this wheat matured. The Indians, however, threshed about 11,000 bushels of oats, and although they were frosted, they were fit for feed and saleable.

The Indians purchased the following named implements and saddlery: 7 wagons; 6 sets of bob-sleighs, 3 mowers, 1 rake, 4 sets of harness, and 2 saddles, during 1907; and notwithstanding the poor results of their farming operations, they have made some advancement in the line of better buildings and their investments in implements as the foregoing report shows.

BLOOD AGENCY.

Parts of the months of January and February were occupied in the inspection of this agency and reserve.

The staff here included, R. N. Wilson, agent; J. W. Jowett, clerk; C. H. Clarke, G. D. Winder, E. G. Hillier, stockmen; J. A. Webb, issuer; J. B. Shield, interpreter; Joe Ely, mail-carrier, &c.; Max W. Fat, Joe Beebe, James Wells, assistant stockmen; Calf Tail and Does-not-tie-his-shoes, constables; Dr. Edwards, medical officer; Rev. Sister Mary of the Presentation, matron of the hospital; Sisters St. Germain and St. Le Blanc, nurses; and Weasel, White Buffalo and Yellow Shining were employed during the winter months to assist at the feeding of the bulls.

The monthly pay-sheet then amounted to $698.33.

A complete traction steam power ploughing outfit had been purchased during 1907, and 820 acres of land had been ploughed and about 600 acres had been seeded to winter wheat, and the prospects for a good return are now very bright. There is now about $10,000 of the Indians funds invested in farm machinery and in land improvements in connection with the farming operations herein briefly described.

When the cattle were gathered together last autumn and a count made, it was found that there were about 5,500 head and that the loss during the hard winter of 1906-7 was less than 30 per cent.

These Indians have of late years made very satisfactory progress towards self-support, and it is thought that within a year or two all the able-bodied members of this band will be in a position to provide for themselves, and that only the aged and infirm will be wholly or partially looking to the government for assistance.

I found that the office work had been very methodically carried on by Mr. Jowett, and that during the year 1907 there had been 1,239 cheques issued and that these cheques called for $21,740.73.

Various returns and statements were made up and forwarded to the Indian Commissioner, in duplicate, together with a report touching on various matters in connection with the workings on this reserve, and like returns and reports were, also, made up and likewise forwarded after the inspections of all other agencies and reserves.

EDMONTON AGENCY.

Mr. James Gibbons resigned the position of agent nearly a year ago, and from that time to this Clerk Black has had the supervision of the Edmonton agency and reserves in connection therewith. Last December, however, I was notified that Mr. Owen McKay, of Leduc, had been appointed to succeed Mr. Gibbons, and I was instructed to install Mr. McKay in the office and duties to which he was assigned. I went up to Edmonton and was accompanied out to the agency by Mr. McKay, and there learned that he entertained doubts as to whether he would accept the position or decline it. Mr. McKay evidently decided to accept the post, and I resolved to go and inspect the Hobbema agency while Mr. McKay was engaged in moving his family and household effects from Leduc to the agency. While I was engaged at the inspection of the Hobbema agency the painful news of the sudden demise of Mr. McKay reached me, and the Edmonton agency inspection was deferred therefore. I am now under instructions to proceed again to this agency to install Mr. Urbain Verreau, who evidently has been appointed to the position of agent, and it is my present intention to go to the place referred to and to hand over the supervision of the agency and reserves to Mr. Verreau and also instruct him regarding the duties of the office.

When at this agency during December, I observed that a much required new office and storehouse had been erected and that this building was then occupied. The agency house had, too, been considerably remodelled and a new hot-hair furnace placed therein.

I have &c.,

J. A. MARKLE,
Inspector.

REPORT OF INSPECTOR FOR TREATY No. 8.

DEPARTMENT OF INDIAN AFFAIRS,
OTTAWA, January 7, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report on the affairs of Treaty No. 8 for the year 1907.

I left Ottawa on April 17 and proceeded to Edmonton, where I remained until May 7. On the latter date I left for Peace River Crossing via Athabaska Landing, a distance of about 500 miles; and I may say that this was the hardest trip that has fallen to my lot to make in that country; the frost was coming out of the ground and temporary bridges had to be erected, rafts constructed, and more or less chopping done over ground which had never before been used as a roadway. We travelled the distance in wagons by trail. In former years I usually made use of the water route from Athabaska Landing to Slave Lake; but at the former place I learned that, owing to the lateness of the spring, the ice had not moved in Lesser Slave lake, so that, as above stated, I travelled the whole distance by wagons, in order to meet the Hudson's Bay Compan'y's steamer on her first trip from Vermilion to Fort St. John.

I reached Lesser Slave Lake on May 20, and found that Dr. West, medical officer for Treaty No. 8, could not accompany me, owing to an attack of rheumatism. The following day we left for Peace River Crossing and reached there on the 24th. We had to remain there until the 30th, when the steamer arrived.

The trip to Fort St. John from Peace River Crossing, although only a distance of 200 miles, took until June 8, to cover. The river was in flood, and it was impossible to go up stream more than two or three miles an hour, and at times much more slowly even than this. Treaty payments were made at Fort St. John in the afternoon of the day of arrival to 101 Indians. During the year there were 4 births and 6 deaths. On Sunday, the 9th, we left Fort St. John on our return trip down the Peace river, and paid treaty to 137 Indians at Dunvegan. The health conditions at this point were good, as no deaths were reported. There were 3 births during the year.

Treaty payments were made on June 11 to Duncan Testawits band, at Peace River Crossing, 58 Indians receiving payment. There was 1 birth and 3 deaths reported. We reached Vermilion on Saturday, June 15. Treaty payments were made to the three bands there on the 17th and 18th. Altogether 482 Indians were paid. There was a noticeable increase in the births, 26 being reported. Only 7 deaths occurred during the year.

On the 19th we left for Little Red River, below the chutes on the Peace river, and on the following day treaty payments were made to 69 Indians. At this point there were 2 births and 8 deaths reported during the year.

From Little Red River we proceeded, on the Hudson's Bay Company's steamer *Primrose*, to Fort Chipewyan, a distance of 280 miles. On June 25 we paid annuities to 564 Indians in the two bands there. During the year 25 births and 14 deaths occurred.

From Fort Chipewyan we sailed to Fond du Lac, at the east end of Lake Athabaska, a distance of about 200 miles. Annuities were paid there on the 29th to 311 Indians. There were 5 deaths and 8 births reported.

The payments to the Indians at Fond du Lac terminated our work in the Peace River and Athabaska Lake districts.

I am pleased to be able to state that throughout this territory I found the Indians in a good state of health. They reported a hard winter and a shortage of fur, but they managed to survive the winter with but little assistance from the trading posts. At all the places visited I heard complaints with regard to the sale of beaver skins, but I feel satisfied that, with the explanation given them of the object of the law, they are quite willing to desist from killing the beaver. The Indians at Fond du Lac stated that in their district they were prohibited from disposing of their beaver skins, and were not killing the beaver; and that, this being the case, the Indians of the province of Saskatchewan, where there is no such law, were coming into their territory, killing the beaver and disposing of the skins in Saskatchewan. I learned from the traders at this point that this was being done and that the Indians of that district had lost a great deal, not only in beaver skins, but in other fur which the Indians of Fond du Lac would have got had not the Indians from Saskatchewan come in to kill beaver.

From Fond du Lac we returned to Fort Chipewyan, and then proceeded to Fort Smith. Dr. Barrow, of Edmonton, joined the party at Fort Chipewyan, having been sent north to take the place of Dr. West as medical officer.

The annuities were paid at Fort Smith to 196 Indians. There were 8 births and 10 deaths during the year.

We left Fort Smith on July 6 for Fort Resolution by the Roman Catholic mission steamer. The annuities were paid there to the three bands, the Yellowknives, Dogribs and Chipewyans, on July 11. Altogether there were 521 Indians paid. During the year there were 20 births and 25 deaths.

After paying the annuities, we crossed Great Slave Lake to Hay River and paid annuities to 114 Indians on July 17. There were 7 births and 8 deaths reported. There has been an epidemic of measles at this point.

We returned to Fort Resolution and remained there until the arrival of the steamer *Wrigley* from Peel's river on August 4. We then proceeded up the Great Slave river, across Lake Athabaska and up the Athabaska river to Fort McMurray, where we paid annuities to 173 Indians. This number includes the Cree and Chipewyan bands and the Stragglers band of that place. There were during the year 6 births and 3 deaths. The date of payment there was August 14.

We then travelled up to the Pelican portage, a distance of 140 miles, part of the distance by tracking line, and the last 50 miles on the steamer *Midnight Sun*. Mr. A. Kennedy and his canoe party met us at Pelican portage on August 30, and we travelled together to Wabiskaw. Paid annuities at that point to 224 Indians. There were 11 births and 9 deaths reported.

On September 6, we left by pack team for Whitefish Lake, a distance of 90 miles from Wabiskaw. Paid annuities there on the 12th to 74 Indians. There were 2 births and 4 deaths reported.

On the following day we left Whitefish lake and reached Lesser Slave Lake on the 14th. We remained at the police barracks until the 17th, when we left for Sturgeon Lake. Paid annuties to 168 Indians at that point. There were 6 births and 3 deaths reported.

We returned to Slave lake, and on the 27th paid part of Kinosayo's band in the house of Moostoos (headman), at Sucker creek. In the evening we went on board the steamer *Northern Light*, and on the following morning paid annuities at Kinosayo's reserve, Swan river. There were 332 paid. There were 16 births and 8 deaths reported. This was our last point of payment.

I have already reported that an agent is required at Lesser Slave Lake. At present it is more than ever essential, owing to the fact that settlers are going into the district. Eight or ten families went in during the past summer, and I understand that a great many more intend moving in duringthe sumer of 1908.

During the summer I made payments to 16 chiefs, 33 headman and 3,465 Indians. There were 145 births and 115 deaths reported.

I have, &c.,

H. A. CONROY,
Inspector, Treaty No. 8.

REPORT OF SURVEYOR J. K. McLEAN.

DEPARTMENT OF INDIAN AFFAIRS,
OTTAWA, December 14, 1907.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to report that the following surveys were completed by me during the past season.

ELKHORN INDUSTRIAL SCHOOL.

I arrived at Elkhorn on May 14, and proceeded to survey the hay grounds belonging to the school. I also ran a series of levels to show whether or not it is practicable to drain the proposed septic tank at the institution.

LONG PLAIN RESERVE, NO. 6.

The outlines of this reserve having become obliterated, they were re-established. A large drain which has been constructed on this reserve by the Provincial Department of Public Works terminates at present in a large slough on the reserve instead of being carried on to the Assiniboine river as recommended when the work was undertaken. This has the effect of destroying a valuable hay ground, the loss of which falls heavily on the progressive Indians, four of whom live in the immediate neighbourhood and depend on this slough for their hay-supply. These four men have good stock, implements and houses, and have about 300 acres under crop this season.

ROLLING RIVER RESERVE, NO. 67.

Owing to increasing settlement in the neighbourhood of this reserve, it was necessary in order to prevent trespass, to re-establish the boundaries. The land is somewhat rough and stony, but generally wooded except at the south end, where a few of the Indians have a small area under cultivation. After completing this survey I intended proceeding to Norway House; but owing to the late season and to the fact that the ice did not leave the north part of Lake Winnipeg until nearly July 1, I was instructed to make other surveys.

WAYWAYSEECAPPO RESERVE, NO. 62.

The boundaries of this reserve were also re-established. About one-half the reserve, or all the open portion, was subdivided into quarter sections, so that the Indians, some of whom are doing well as farmers, will be able to have their farms in quarter sections, instead of scattered over the reserve in irregular areas. Several of these Indians have from 50 to 80 acres under crop. One of them had very fine fat

cattle last spring, and a stock of old hay left over, which was very unusual for any farmer after the long, cold winter and spring.

RIDING MOUNTAIN RESERVE, NO. 61.

Nearly the whole of this reserve was subdivided into farms corresponding as nearly as possible to the regular sectional system. Owing to the granting of two roads running north to the municipality of Strathclair, the farms were made to front on these roads.

These Indians are improving. They have good stock and implements, and are increasing the area of cultivated land yearly.

The surrendered portion of this reserve was examined and valued.

CLEAR LAKE RESERVE, NO. 61 A.

This is a small reserve at Clear lake in the forest reserve in the Riding mountains, belonging to the Riding Mountain Indian reserve, and is made up of a number of sections, the outlines of which had not been surveyed. Complaints were made that timber was from time to time being taken, and the boundaries were surveyed. A few Indians reside here, but beyond a few small gardens they do no cultivation.

THE PAS RESERVE A.

Five hundred acres at the north end of this reserve having been surrendered, it was surveyed into a town-plot. About 400 lots, 66 feet wide by 132 feet deep, were laid out and the remainder was surveyed into park lots, which can be surveyed into small lots at a later time or sold in blocks. A branch of the Canadian Northern railway crosses the Saskatchewan river here, and, as it shortly will be completed to the river, a town should grow up quickly, in fact a few people are now there awaiting the advent of the railway.

The Hudson's Bay Company has a store and this season built a large storehouse intending to supply seven of its northern posts from the Pas. There are also two or three small stores. Station grounds are laid out on the surrendered portion. Lumbering operations on a large scale in the vicinity are also spoken of, so that in the near future a town of considerable importance may spring up.

I have, &c.,

J. K. McLEAN,

REPORT OF SURVEYOR J. L. REID.

DEPARTMENT OF INDIAN AFFAIRS,

OTTAWA, December 12, 1907.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—In compliance with instructions of March 22 last, I left Ottawa on April 18 and, having organized a party, made subdivision survey of portions of Indian reserves Nos. 72 and 73 at Broadview, in the province of Saskatchewan.

From Broadview I proceeded to Mistawasis reserve, No. 103, and subdivided the southerly portion of that reserve; thence to the Big River reserve, No. 118, laying

off an addition to that reserve, cutting off the same area from the southwest corner of said reserve, No. 118.

From Big River reserve I took the outfit to Battleford and ran round the boundaries of the land assigned for the uses of the Battleford industrial school.

From Battleford I proceeded to Frog lake and surveyed a fishing station for the Indians of reserve No. 121, cutting off an equal area from the southeast corner of that reserve.

From Frog lake I went to Cold lake, where I laid out 160 acres for the Roman Catholic mission from reserve No. 149, and laid out a fishing station on Cold lake in lieu of the land taken from the reserve for the mission property.

From Cold lake I proceeded via Saddle lake to Beaver lake and laid off a reserve for the Indians of that locality, in compliance with instructions received.

Returning from Beaver lake I proceeded to Meadow lake and retraced the boundaries of that reserve, thus closing the season's operations.

I have, &c.,

J. LESTOCK REID.

MANITOBA AND THE NORTHWEST PROVINCES AND TERRITORIES.

OFFICE OF THE INDIAN COMMISSIONER,
WINNIPEG, June 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to subit my annual report upon Indian affairs in Manitoba, Saskatchewan, Alberta, the Northwest Territories, and that portion of Ontario included in Treaty No. 3.

The late spring of 1907 and the unfavourable weather before the harvest made the year a poor one for the Indian seeking his livelihood from the tilling of the soil.

But those who have failed to follow the department's lead, and continued the hunt as a means of sustenance, were not in a position to point the finger of scorn at those of their brethren who had adopted the agricultural life; for the marked scarcity of fur-bearing animals made the hunt on the whole a comparative failure.

The depletion of many of the waters by commercial fishing restricted for some that ready-to-hand supply of food to which in the past they were accustomed.

The Indian, who, with the white farmer, felt the effect of the poor harvest, was also affected by the financial stringency. Indeed, those of them who have attained the condition of self-support felt it even more keenly than did the white man, for the reason that it is not so long ago since to the red man the significance of money was unknown.

Despite the unfavourable conditions, however, there has been a fair degree of progress among the Indians of the west, and agricultural operations have been resumed on an extended scale. At the beginning of their farming ventures, failure so discouraged the Indians that it was difficult to induce many of them to again put their hand to the plough and others continued reluctantly the tillage of the soil without the will which makes labour pleasant and profitable. Now, however, a fair proportion know the good results that the earth, notwithstanding occasional failures, will yield to cultivation, and after failure they return to the tillage of the soil with hopefulness and energy.

Last fall the Indians of the Qu'Appelle agency broke 860 acres of new land, and the area put under crop this spring was much larger than ever. On the Assiniboine

reserve, where the cultivated area was doubled last year, there has this spring been a still further increase. The Indians of Touchwood agency have brought more land under cultivation; and in the large Carlton agency more interest than ever has been evinced in farming. In the Pelly agency there has been this year an addition to the number of farms, and those Indians who moved off the surrendered land on Cote's reserve have found new fields.

The Blood Indians, one of the groups most averse to agriculture, and having a reserve in a portion of southern Alberta which long was regarded as unsuitable for farming, have been moved by the success of their white neighbours to assay the growing of fall wheat. Out of their funds, a complete steam ploughing outfit has been purchased; and fifteen Indians have broken 840 acres of land, 600 of which is now under wheat, not in a community farm, but in individual holdings. They have availed themselves of insurance against hail, and have evinced an unlooked-for interest in their farming operations. The wheat is reported as doing well. Eight other Bloods are following this example and having land broken for seeding in the autumn.

On the Peigan reserve—somewhat similarly situated to that of the Bloods—farming was started on a small scale a few years ago, and, although the last harvest was not heavy, the Indians are increasing the acreage to be put under crop in the fall.

The outlook is such as to encourage. Weather conditions so far have been excellent, and we may look forward to a much better harvest than that which repaid the toil of the year that is past.

It is to be hoped that, emphasized by the lesson of a bountiful harvest this autumn, the failure of the hunt—which must become less and less dependable as a means of support as the area of settlement extends and railways spread over the country—and the restriction of Indian fishing incident to the extension of that industry commercially, will lead the Indians to the safe and ample means of livelihood afforded by the soil, through its cultivation and the pasturage of cattle.

While the results of the farming operations during the past year were not encouraging, the mild winter which followed the harvest gave compensation in the cattle industry. On the whole it has been very successful. More interest has been shown in the care of cattle. In many cases more hay than was required had been put up, and many Indians were in a position to sell at a good figure to those who had not sufficient. Although it was suggested that because he had formerly lived by the buffalo, the Indian would take more kindly to cattle-raising than to farming, our early efforts in that direction were not encouraging. The Indian rather thought that, like the buffalo, the bovine should live without care or trouble on the part of man, and that he should be shot irrespective of the time or the season, whenever appetite suggested the desirability of a meat-supply. Constant effort is, however, now being rewarded, and the Indian is coming to realize that in cattle-raising, as in every other avocation, work is essential to success.

The winter of 1906-7 was a hard one on stock, and it will take some time to make up for the consequent losses. In the Carlton agency the loss in 1906-7 was 150, but by December 31 last, there was a net increase of 61 in the herds. In the Crooked Lake agency the Indians sold 108 head and beefed 49 for their own use. In the Onion Lake agency the industry was profitable, many of the Indians having supported themselves almost exclusively therefrom. In the Touchwood agency the cattle came through the winter in splendid condition. Many of the Indians keep milch cows all the year round, and some make butter for their own use and for sale. On the Assiniboine reserve there has been a good increase, and the Indians are benefiting more largely from their stock. In the Battleford agency there has been a marked improvement; and many of the Indians are meeting with success in raising hogs and sheep. When the herds of the Qu'Appelle agency were rounded up in January, 1908, it was found that in three years there had been an increase of 67 head, which must be considered a good showing when it is taken into account that the Indians during that period pro-

duced much beef for their own use and disposed of over 700 head. The Blackfoot Indians, who suffered severe losses in 1906-7, look forward to some considerable recoupment through increase of the herd. At the last round-up upon the Blood reserve 1,146 calves were branded, the whole herd was found to number 5,537, and the losses turned out to be less than the average of loss throughout the district. Cattle-raising has always been regarded as the principal means of support of these Indians, and it is gratifying to know there is large hope that in the near future the attainment of that result may be looked for.

While the expenditure upon Indians has reached a large figure, it is to be remembered that it is based upon the principle of spending in the present for the purpose of making the Indian ultimately self-supporting, instead of spending for the mere purpose of feeding him for an indefinite time. In the distinctively agricultural agencies the ration-house, as it once existed, is practically a thing of the past, and all but the old and infirm may now be classed as self-supporters, some gaining their livelihood in the main by mixed farming, and those who have not yet taken to agriculture, through different forms of labour performed for hire. In the distinctively cattle-raising reserves the reducing of free rations continues.

In the Blood agency five years ago 450,000 pounds of beef were issued free to the Indians. During the last fiscal year the issue was only 139,000 pounds. At this rate, it will be seen that the time is not distant when the issue will be restricted to those who are unable through age or physical infirmity to provide for themselves. In 1902 the free issue of beef to the Peigan Indians amounted to 216,416 pounds; in 1906 it was reduced to 64,564 pounds. Last year there was a further decrease of 1,604 pounds. This band is now practically self-supporting, only the aged and infirm being provided for. On the Sarcee reserve the free rations continue to diminish towards the vanishing point. In the Stony agency where the Indians turn their beef into an abattoir to be held for their own use, there were 6,142 pounds at the credit of the Indians, and those who had exhausted their supply there were loaned, not given gratis, some 1,000 pounds. On the Blackfoot reserve the earning power of the Indians in the past two years is estimated to have increased fifty per cent, and now, outside of those incapacitated for labour, they are close to self-supporting.

Although the health of the Indians is reported to be generally good, and there has not, during the year, been any great epidemic, it is to be regretted that on certain reserves the death-rate has exceeded the birth-rate. The chief cause of this unfortunate condition is tuberculosis. The disease is particularly difficult to cope with among Indians. The introduction of the tent hospital, however, is proving beneficial in glandular tuberculosis; and as a rule the Indians are paying more attention to sanitation. But at best it will take many years to eradicate consumption, and the advancement of the Indian to a position in which from the fruits of his labour he will be able properly to feed and clothe and house himself and his family, will operate to that desired end more effectively than the medical treatment and care that can be afforded to those in whom the germs of the dreaded disease have begun to develop.

The reports indicate that improvement in health as a rule keeps pace with improvement in conditions. On the Blood reserve, where there has been considerable advancement and much betterment of the conditions of life, resulting in better provision now being made for bodily comforts, the birth-rate has been 45 per thousand and the death-rate 35. Of course this must in a measure be attributed to the general hospital and the hospital for contagious diseases conducted on the reserve by the Grey Nuns under the medical supervision of Dr. Edwards. It is regrettable to note that among the neighbouring Blackfeet who are of the same kind as the Bloods, the death-rate has exceeded the birth-rate by twelve. It is all too apparent, indeed, that they have not made as good use of their increased earning powers in the way of improving the conditions of life as have the Bloods. In the Carlton agency, where there is considerable of good housing, the births have greatly outnumbered the deaths. In the Battleford

agency, where there is a pretty general marked improvement in conditions, the births have exceeded the deaths by 18. On the other hand, in the Qu'Appelle agency, where there have been large crops raised by the Indians, and a large measure of prosperity and improvement in conditions has been noted from year to year, the birth-rate has only been 6½ per thousand, and for 14 births there have been 20 deaths.

The Battleford agent attributes the excess of births over deaths in his agency to 'the dwellings and premises being kept in a cleaner and healthier state,' to the Indians being 'more comfortably clothed,' to their 'having more wholesome food,' and to 'the living of better lives.'

In the Carlton agency, where the health statistics are also gratifying, the dwellings and surroundings are particularly clean and sanitary, and of the Sturgeon Lake reserve it is remarked that several dwellings have been erected which are superior to those of the surrounding white settlers.

There is a notion that the ravages of tuberculosis are a consequence of the change from the former roving life of the Indians under canvas to their now more sedentary conditions of existence and to their life in unsanitary and ill ventilated dwellings. As a matter of fact, the Indians who followed the buffalo, very generally wintered in mud-plastered cabins with flat thatched roofs, with scarcely ever more than one door, and usually but one window. The only real means of ventilation was the open fireplace made of mud, but this passed away and stoves were introduced, which the Indians, like the white man, preferred because of their greater heating capacity. It is just such of those huts as remain that continue to afford rich breeding grounds for the germs of tuberculosis; and it cannot be too strongly insisted upon that step by step with material progress the Indians must be led to provide themselves with better housing.

The increasing of his area of tillage, the enlargement of his herds, and the accumulation of money will not operate for the real benefit of his race, unless the Indian be taught to use these things as instruments for the better feeding and clothing of himself and those dependent upon him, and for the housing of his family in comfortable and properly ventilated houses. The Indian himself is beginning to realize this, and despite the discouraging ravages still wrought by the dread disease of tuberculosis, there is reason to look forward to the day when the Indian will be at least as free from this plague as his more favoured white brother.

The pushing of settlement up against many reserves that until the marked western development of recent years were practically isolated, has intensified the strain to which sudden contact with the settled conditions of our civilization put upon the Indian, unprepared by his environment to readily make use of the advantages while avoiding the evils of the new order. The history of the progress of civilization shows that it often creates difficulties for those it is designed to benefit before removing the evils which it is intended to cure. Where not long ago Indian settlements could only be reached by devious trails or through the bush-lands, railways have entered, and in place of scattered Indian dwellings, towns have arisen. With the towns has come the readier access to intoxicating liquor, so tempting to the red man and so destructive to all hope of his advancement. One of our greatest problems has been to find means to adequately cope with drunkenness, which despite all effort increases its baneful influence among many of the bands. And with every measure of increase in the liquor traffic goes a proportionate measure of immorality. It is consoling, however, to note that among a goodly number of the tribes the liquor traffic is gradually growing less, that groups are now noted for temperance, and that a healthier moral condition has taken permanent form. It is to be remembered, in justice to the Indian, that cases of dissoluteness generally obtrude themselves on the public notice, while virtue quietly practised passes unobserved.

It is to be regretted that there is not a more general realization among the citizens of the country of the importance, in the public interest as well as in the interest of the Indians themselves, of discouraging the aborigines from indulging in

demonstrations of their old-time customs and ceremonies. At many fairs and exhibitions Indian parades and dances are put among the prominent attractions. The result is that the unprogressive Indian, who seeks to perpetuate the old order and to prevent the extension of the new, is aided in his efforts and put in a position to work against the more progressive and especially the younger element who desire to break with the old order and to follow in the ways of the cultivators of the soil. I have done what I could to put an end to this most prejudicial practice, and I am happy to say that in this I have received the fullest co-operation on the part of the Provincial Governments of Manitoba, Saskatchewan, and Alberta. I am, therefore, led to hope that in the future Indians will cease to be used as painted and bedecked things for the amusement of others, and will when taking part in exhibitions take such part as displayers of the products of their labours.

Under the treaties large areas of land, in most cases the best fitted for agriculture, were set apart for the Indians. As was to be expected, the area was much in excess of that which they could, even when their maximum working power was reached, make profitable use of. The locking up of vast tracts which the Indians could not make use of was neither in their own nor in the public interest. Yet the Indians in many cases were averse to parting with any. The amendment in the new law which permits of fifty per cent of the money derived from the sale of surrendered lands being immediately used, and the investment of the returns in outfitting Indians for work and enabling them to improve the conditions in which they live, has led many of the Indians to make surrenders. And thus with the proceeds of land that could only lie idle and unremunerative, they are being put in a position to make use of that which they still hold.

For many years the St. Peter's reserve, adjoining the town of Selkirk, has been a fruitful source of trouble. Several claims of non-Indians to the ownership of land therein have been pressed continually. And the proximity of the reserve to the town militated against the progress of the Indians. Recently the claims to land in the reserve were adjusted by Chief Justice Howell; and the Indians were induced to surrender the whole of the reserve, in consideration, among other things, of the setting aside of a tract of land for them upon Lake Winnipeg, where, removed from the temptations of the town, they may be expected to form a progressive settlement.

Education.—Much that is distinctively new cannot be added to what has been said in previous reports upon the subject of education. The work has proceeded along the established lines, and as a whole the results must be regarded as fully justifying the expenditure of public moneys necessary for the maintenance of Indian schools.

These schools are grouped into three classes: day schools, boarding schools, and industrial schools. The day schools are a distinct class. Between the boarding and industrial schools it is not always easy to draw a clear line of demarcation, for many of the larger and better-equipped boarding schools provide a measure of industrial training for the pupils. Indeed, in every case we insist as far as possible on some manual or industrial training being given. And in the case of the boarding schools erected within the last few years at Fort Alexander, Fort Frances, and Sandy Bay, it was specially arranged that means should be provided for giving the boys such training as would enable them to take up the tillage of the soil after they had finished their school course.

During the past year three day schools have been closed, namely: two in the Savanne agency and one in the Pelly agency. The attendance had fallen so low that there was no justification for keeping them open. But they were closed on the understanding, of course, that, in the event of there being evidence afforded that a fair attendance of Indian children could be secured, they would be re-opened. In pursuance of that policy, we have re-opened a school at Fort Alexander which had been long closed for want of adequate attendance; and it is to be hoped that while they lasted its advantages the Indians may have learned to appreciate it better. The Fort Resolution school, which existed before the Indians in its vicinity came into treaty,

is now listed as a regular day school; making the total number of day schools within the bounds of the treaties, 70. In addition to these there are 23 day schools outside of treaty.

Day schools have never been regarded as very effective agencies of Indian education; and indeed with the small salaries paid it would scarcely be reasonable to look for any large results. There are points, however, at which day schools are capable of doing, and do effect good. Reading the reports of agents, the conclusion might seem fair that these schools are comparative failures; but, when one takes a general view, he finds evidences of the opposite. This year the attendance has been better, which, while it may in some measure be attributed to the mild winter, must be partly due to the growing interest of the Indians in the education of their children. We have not much information to go upon in regard to those schools outside of treaty. The reports, owing to the distances, come irregularly and sometimes not at all; but we do know that they have been established in connection with missions and that the object of their establishment was solely the benefiting of the Indians, and they cannot under the direction of the missionaries effect aught but good.

The preference which the Indians in recent years have evinced for boarding schools in the vicinity of reserves seems to increase. This preference begets interest, and the interest of the parents is a large factor in the success of the school. There are 44 boarding schools receiving regular grants from the department. The school at Fort Providence has been put into this class. The Roman Catholic boarding school which existed for many years at Isle à la Crosse, was just being removed at the time Treaty 10 was made. When the Isle à la Crosse mission was founded by the late Archbishop Taché, then a young missionary, it was established on a site which appeared the most desirable in the vicinity. Time wrought its changes, however; where fish had been once abundant they became scarce, and what it was supposed would afford a reasonable area of land for cultivation, turned out in years to be very limited. It was seen that a change would have to be made, and therefore as the building grew old, necessary repairs were not made. On a pleasant site on the rising ground above Lac la Plonge, which abounds in fish, and surrounded by a well-wooded tract of land, the soil of which when the timber is removed will afford ample ground for cultivation, a large and well-appointed building was erected, and at the date of the making of Treaty 10 and before the Commissioner left the country, the children were removed from the old school and comfortably placed in the new. In Treaty 8 a new boarding school building was erected at Sturgeon Lake to take the place of that at Smoky River, at which it was found a satisfactory attendance of children could not be secured. The Smoky river empties into the Peace, and in the vicinity of their confluence there are not many Indians, whereas Sturgeon Lake is a gathering point for many.

In the boarding schools provision is made for 1,689 pupils, or 15 more than were provided for in the preceding year; the increase being due to the fact that the Fort Alexander school has been authorized to receive 60 instead of 45 boarders. This school is well equipped, and can adequately accommodate the additional number. I have before me the returns for the last quarter from all the boarding schools, except those at Hay River, Fort Resolution, and Fort Providence, which are so far removed that their returns are late in arriving. The returns show that fifteen of the boarding schools have the exact number of boarders authorized. Six of them keep a few pupils in excess of the number authorized. This is done because there is available accommodation; but without support from the department. The rest of the boarding schools have not pupils enrolled to the number authorized, but with the exception of the Church of England school on the Blood reserve and the St. Albert school, which lack 10 and 13, respectively, of the number authorized, each of the others is only short from two to three pupils.

Of industrial schools we have one less, the Calgary school having been closed on December 31, last. The preference of the Indians for boarding schools on reserves

made it impossible for the school at Calgary to secure such a number of pupils as would at all warrant the expenditure necessary for keeping it in operation. There are now seven industrial schools.

The teaching in the class-rooms of our schools is in accordance with the department's programme. Thirty-nine teachers have Normal or other teaching certificates. Twelve of these are in industrial schools, 17 in boarding schools, and 10 in day schools. While it is desirable to have Normal-trained teachers in the schools, it should be remembered that the Sisters, who do a large share of the teaching in those institutions conducted under the auspices of the Roman Catholic Church, are generally recognized as being well qualified for their work; and the same must be said of those non-certificated teachers who are found in schools conducted under the auspices of other denominations.

The work of the class-room is not allowed to absorb the whole time and attention of the Indian boys and girls. We endeavour to have the hand trained as well as the head. The girls are taught household duties by taking part in the regular domestic work of the schools; they learn to cook meats and vegetables and to bake bread by seeing such cooking and baking done and by helping thereat. They are taught to care for their clothes, and by example as well as precept are taught the pleasures as well as the advantages of cleanliness. They devote some time each week to sewing and mending, and their handiwork in this direction has been praised by many competent to judge. Every industrial school takes measures to train the boys in practical agriculture; and in some of the boarding schools there are farming instructors who teach the rudiments of farming. No attempt is made to teach scientific farming, for the Indian has not reached a stage, and must not be expected to for many years, where he can grasp the significance of the chemistry of the soil. We confine ourselves to measures designed to make him familiar with the handling of the plough, and with the sowing and reaping of the grain. Carpentry and blacksmithing are also taught. We do not, however, as a rule aim at giving such technical training in these branches as would turn out finished artisans, but rather confine ourselves to making the Indian boy when he leaves school competent to do the carpentry work that a handy white farmer does, and to be able to make the ordinary repairs to implements, wagons, and harness. Our Indian boys have in one respect an advantage over the ordinary white boy. When the treaties were made, liberal allotments of land were set aside, and now every Indian boy when he leaves school has awaiting him an ample area of land, in most cases very good, and in all cases cultivable, upon which he can at once settle and make a home.

During the year there have been in our schools very few cases of breach of discipline or desertion. Each year seems to make the Indian more amenable to the restrictions of school life, and more ready to benefit by the advantages afforded. Indeed, the children were not at any time most to blame, for, apart from scattered individual cases, they seemed to appreciate what was being done for them. Many of the parents, however, suspicious of the new order and preferring to have their children grow up to be like unto themselves, often induced boys and girls who had been placed in the schools, to desert, or in their intercourse with them so worked upon their minds as to make the school life seem irksome, and rendered the children restive of discipline. It would be invidious to make comparison among the several schools. The standing of each can be pretty correctly gauged from the particular reports. My reading of these reports, and the close supervision I have given to the work of the schools during the year, compel me to the conclusion that it would be difficult to find more effective agencies for the uplifting of the Indian and the placing of him eventually in the position of a self-supporting citizen of the country.

That we are succeeding in this direction in a very fair measure is evidenced by the progress of the colony of ex-pupils established some years ago at File Hills. These young Indians are now practically in the position of white farmers. If one were not

aware that he had crossed the boundaries of an Indian reserve, it would never occur to him that the cleanly and comfortable homes presided over by tidy housewives, the well-tilled fields, the domesticated cattle, hogs, and barn fowl, the work horses, implements, and wagons, belonged to young Indian people whose fathers hunted the buffalo and despised the settled ways of the white man.

Of course we deliberately set out in the colony to obtain by selection, grouping, care, and extra expenditure the looked-for results of our educational policy. But what has been achieved in that little community, is being achieved in many individual cases upon all the farming reserves, where graduates have settled and put in practice the teaching of the schools.

The benefits of the system, too, are becoming evident in the more distinctively cattle-raising reservations. One striking instance is particularly noteworthy. Upon the Sarcee reserve the entire herd of cattle is under the direct charge of John One Spot, who is a graduate of the industrial school which until recently was conducted near Calgary. He gives the utmost satisfaction in the performance of his duties; and upon one of his recent inspections Inspector Markle was so taken with the manner in which One Spot's diary as stockman is kept that he had a copy of it made and forwarded it to me as a model for stockmen's diaries.

Particular attention has been given to the providing of proper means of escape in the event of fire at the different boarding and industrial schools. That the measures taken may be regarded as reasonably effective has been shown in the case of the Elkhorn industrial school, where a fire lately broke out, evidently caused by spontaneous combustion in the bed-room of one of the teachers during her absence, and which had got well under way before any of the members of the staff, who were then on the ground floor, became aware of its existence. The prompt use of the fire-apparatus with which the department had equipped the school extinguished the flames and prevented what threatened to be a serious conflagration.

It has been questioned whether the placing of Indian children in schools has not injuriously affected their health. It has been suggested that the change from the free, open life to the confined life of the schools has tended to develop their inherited tendency to tuberculosis. I do not think there are adequate grounds for this assumption. The improvement of the means of ventilation in our Indian schools has at least kept pace with such improvements in institutions for white children, and with better ventilation, especially in the dormitories, and good substantial food, it is difficult to see how the Indian child could be more in a condition at home to readily resist the germs of tuberculosis than when in our schools.

In looking at mortuary statistics of school pupils, it must be borne in mind that when the schools were first established the pupils were recruited—and almost of necessity so recruited—without much care being taken as to medical examination, and the consequence was that many were admitted who were already so affected with consumption as to be beyond hope of permanent cure. Since a higher standard has been established, a stricter medical examination required, and our schools better equipped, the results seem to indicate that it is not to be feared that the health of the Indian race is being injuriously affected by school life. In the year that is past the health of the pupils on the whole has been particularly good; and I am rather inclined to the view that in time it will be established that the health of the Indian has been improved by residence in school rather than enfeebled.

Permit me in concluding to express my appreciation of the helpful assistance ever rendered by my staff, who have, at all times, most willingly co-operated in the carrying out of the government's Indian policy.

I have, &c.,

DAVID LAIRD,

Indian Commissioner.

BRITISH COLUMBIA,
BABINE AND UPPER SKEENA RIVER AGENCY,
HAZELTON, April 4, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report and statistical statement, also list of government property in my keeping, to March 31, 1908.

Agency.—This agency is of all in British Columbia, the most northerly situated, and is bounded towards the north and west by the Northwest Coast agency, towards the south by the Williams Lake agency, and on the east by the Rocky mountains.

For geographical reasons and distinction of entirely different characteristics of two nations—nearly equally large—this agency is treated under two divisions.

THE KITSUN DIVISION.

Language.—The language of the Kitsuns is the original of such spoken by the Tsimpsians of the coast and the Indians of the Nass river.

Location.—The supervision of this part of the district containing the Kitsun nation, begins from the Kitselas canyon of the Skeena river, and about 90 miles below Hazelton, terminating beyond its headwaters, covering, in a northerly direction, a distance of about 160 miles exclusive of Kitwankool, situated on the trail to Ayensk, Nass river, and Kisgegas, on the Babine river, 3 miles beyond its confluence with the Skeena. The other six villages are on both banks of that river and towards its source with that of Kuldoe. With the exception of Hazelton, all the villages are connected by trails with the Nass where they converge at Ayensk.

Reserves.—The reserves of this division contain, collectively, an aggregate of 19,570 acres of agricultural, grazing, hay and timber land, consisting mainly of natural meadows with growths of balm of Gilead, poplar, willow, alder and hazel; and the foothills to the mountains are largely covered with mixed coniferous timber.

Population.—This division consists of a population of 1,150.

Nation.—The Indians under this heading constitute the whole of the Kitsun nation, and, in recount, will herein successively be dwelt upon from the one of Kitwanga, about the middle of the Skeena, to that of Kuldoe, near its headwaters.

KITWANGA BAND.

Reserves.—The reserves of this band are about equally located on both banks of the Skeena and comprise an area of 4,275 acres. With these are included five unsurveyed allotments for fishing grounds.

Population.—The population of this band is 156.

Health and Sanitation.—The Indians enjoyed the best of health, and care is being taken to preserve it by a system of keeping clean all premises and their environs. During the year more of the Indians were vaccinated.

Occupations.—The resources are fishing, hunting and trapping, and keeping some stock. These Indians mainly occupy themselves with cutting cord-wood, tilling their gardens, and working in and about the canneries of the coast. Quite a few of the young men find employment on the Grand Trunk Pacific railway survey, which likewise obtains with other bands. The women and children gather a large quantity of

wild berries, and dry them for winter use; they also attend to the gardens during the absence of the men.

Buildings.—Care is being taken that all buildings are located on dry and healthy ground, and are spaciously arranged to combine comfort and privacy· also with windows enough to ensure the access of plenty of sunlight and fresh air.

Stock.—Cattle and horses wintered well and without loss, and better arrangements for shelter and provender are constantly being made for the same.

Farm Implements.—With the exception of a wagon, the implements used are not such as would be serviceable in actual all-round farming, but suffice in clearing and tilling land for the potato and other root crops, and in reaping, gathering and stowing hay.

Education.—There is one school, and it is centrally located in the village. It is making good progress, to which the pupils' parents contribute by encouraging its attendance to a fair degree.

Characteristics and Progress.—These Indians are intelligent, law-abiding and industrious, and very progressive in their tendencies. They have surprisingly improved their general condition.

Temperance and Morality.—These people are temperate and moral.

KITWANKOOL BAND.

Reserve.—The village of this band, for which no reserve has yet been allotted, is the only one remotely situate from the Skeena, and is located on the right bank of the Kitwanga river, 25 miles from Kitwanga and 4 miles below Lake Kitwankool and on the trail to Ayensk, Nass river.

Population.—The population, not counting about 115, living at Ayensk, Kinkolith and Fishery bay, Nass, is 68.

Health and Sanitation.—There was no illness in this band. Sanitary measures are observed; also vaccination is attended to.

Occupations.—The lake furnishes an abundant supply of salmon, whitefish and trout; hunting and trapping bring good returns, as does also the gathering of wild berries by the women and children.

These Indians work in the coast salmon canneries during the season, and hunt and trap during the winter. In common with all the Kitsuns, they avail themselves of every opportunity of useful employment.

Buildings.—As elsewhere, lately constructed buildings are modern and well-placed.

Stock.—Cattle and horses wintered well and without loss, and better provision is being made for stock from year to year.

Farm Implements.—Only implements serving to break up land, till the soil and for weeding are in use, and such as are employed in haying.

Education.—There is no school in this village; some of the children periodically attend those at Kitwanga, Kinkolith and Ayensk, Nass.

Characteristics and Progress.—These people are law-abiding and industrious, and notwithstanding their isolated condition, have made a fair advance and can be termed well-to-do.

Temperance and Morality.—There were no complaints in regard to either intemperance or immorality.

KITSEGUKLA BAND.

Reserves.—The reserves of this band, comprising an area of 2,732 acres, are located on both banks of the Skeena. The new and old villages are on the left bank of the river; the latter about 9 miles below the first. The new village is on the No. 2 reserve, with its area subdivided on both banks of the river.

Population.—The people of this band's two villages number 96.

Health and Sanitation.—The health of the Indians was excellent. Their premises were kept clean and the ordinary precautions were observed, especially so at the new village. More of the people were vaccinated.

Occupations.—The principal occupations of this band are fishing, hunting and trapping. They largely seek employment, during the season, at the canneries of the coast; and much of their spare time is employed in chopping cord-wood and in improving their homes and land.

Buildings.—With the exception of those of the old village, the houses are well located, modern, fairly commodious and amply lighted.

Stock.—The stock of these Indians is of good quality and is well taken care of.

Farm Implements.—With the exception of a good plough, only ordinary implements required for breaking up land, clearing, tilling and weeding the soil, and for haying, are yet in use.

Education.—A school-house is being built in the centre of the new village. When school was taught at the old place the attendance of pupils proved fair, but became much retarded since the people began moving to the new settlement, 9 miles distant.

Characteristics and Progress.—The Indians of this band are law-abiding, industrious and energetic. They are constantly improving in a general respect.

Temperance and Morality.—In both respects their conduct is excellent.

GETANMAX BAND, HAZELTON.

Reserve.—The reserve lands of this band are located, with the exception of a timber reserve, on Two-mile creek, on both banks of the Skeena, and inclusive of Rocher Déboulé, also assigned to this band and on both banks of the Bulkley river, comprise a total area of 3,791 acres. For the most part these lands are well watered and suitable for agricultural and grazing purposes.

The delta formed by the confluence of the two rivers, whereon the township of Hazelton is situate, contains, to the back or east of it, on a plateau intersecting the delta and its triangle at shorter base from north to south, the old Indian village on the left bank of the Skeena, and on the right bank of the Bulkley, the new Indian village, with the agency buildings at a fair distance between them.

Population.—This band, largely composed originally of people of other villages, has a population of 249.

Health and Sanitation.—The general health of these Indians was very good. The departmental instructions regarding precautionary measures were faithfully complied with and more of the people were vaccinated. No sign of anything contagious became apparent. Regarding tuberculosis and its dissemination, the people are well impressed of its danger. Attention is paid to cleanliness of person, premises and surroundings.

Hospital.—It is only a just acknowledgment of the sagacity and untiring energy of Dr. H. C. Wrinch to say that the hospital here has become very efficient; and of late it has been taxed to its fullest extent.

In addition to water and gas systems in perfect working order, a 'white line' operating table, with its accessories, of the most improved pattern—placed under a sky-light—facilitate dispatch combined with assured results. Regarding the hospital, it is likewise worth mentioning that, during last summer, two large closed-in balconies were added to the south side of the building. These are especially fitted for the care of tubercular cases, affording these patients the opportunity of exercising in the fresh air without being exposed to the inclemency of the weather.

Occupations.—More or less, fishing, hunting and trapping are some of the occupations of this band, but to a rapidly declining degree of late. Hazelton being the principal point for departing expeditions and the furnishing of supplies, the Indians find ready employment, at high wages, of too many kinds to mention here.

During this year some teaming and extensive packing with horses has come into vogue. The spare days are given to the improvement of their holdings, homes and gardens.

Buildings.—With the exception of the old village, all buildings are well placed; they are of good pattern, commodious and well lighted.

Stock.—The cattle and horses wintered without loss, and they were better provided for than heretofore.

Farm Implements.—With the exception of two mowers, one harrow and a cart, the implements are still such as are generally used for clearing land, gardening, weeding and haying.

Education.—There is one school here for the use of this band. It is well attended and making fair progress. The parents of the pupils are taking an interest in having them attend. The school-house is located at the north end of the Hazelton townsite, near the old Indian village.

Characteristics and Progress.—The people of this band are industrious, law-abiding and careful of their earnings. They eagerly avail themselves of the sub-divisions laid off for homes and continue most satisfactorily onward in the regular order of development.

Temperance and Morality.—Though the temptation to transgress in both is greater here than elsewhere on the Skeena, reasons for complaint are few.

GLEN VOWELL BAND.

Reserve.—The village of this band is situated about 4 miles above here, on the special reserve of Sikedach, on the right bank of the Skeena. This reserve contains 900 acres, which are subdivided into plots of choice agricultural and pasture lands.

Population.—This band has a population of 88.

Health and Sanitation.—The health of this band was excellent; the necessary precautionary measures are well observed, and more of the people were vaccinated.

Occupations.—In addition to doing some fishing, hunting and trapping, and working a saw-mill, these people find remunerative employment, which the proximity of Hazelton affords. Much of their time is occupied in the improvement of their holdings.

Buildings.—The buildings of this settlement are spaced off and aligned, and are uniformly of modern pattern, well lighted and capacious, and compare favourably with those of white settlers.

Stock.—The cattle and horses are properly looked after, and fair provision is made for their keep.

Farm Implements.—Only the necessary implements for breaking up land, tilling the soil, gardening, weeding and haying are used here yet.

Education.—There is one school here. It is situated in the centre of the village. Its attendance is generally up to the number of children of school age in the settlement. The parents of the pupils insist upon their presence, and the teacher's efforts, thus supported, produce good results.

Characteristics and Progress.—The people are law-abiding, industrious and persevering. Much of their land has been converted into pasturage and gardens, and more is being cleared and well fenced. All that is accomplished, in so short a time, is a record not easly surpassed.

Temperance and Morality.—These Indians are a temperate and moral community.

KISPIAX BAND.

Reserve.—The village of this band is located about nine miles above and to the north of here, on the right bank of the Skeena and on the left bank at the mouth of

the Kispiax river; with the special reserve of Aguedin north from the village of Kispiax, and inclusive of Sikedach, mentioned with the preceding band, comprises a total area of 4,916 acres of agricultural, grazing and hay land, which to a large extent has been subdivided.

Population.—This band has a population of 216.

Health and Sanitation.—The general health of these Indians has been very good. The usual precautions are taken to preserve it, and some of the people were vaccinated. On Friday of every week, Dr. H. C. Wrinch, of here, visits their village, where he maintains a dispensary for the treatmnt of cases of sickness and ailments occurring.

Occupations.—These Indians operate a saw-mill, improve their land, and quite a number of them repair to the coast for employment in and about the salmon canneries there. In addition to other pursuits of a mixed nature, they also fish, hunt and trap.

Buildings.—All buildings erected here of recent years are of very superior quality, being in striking contrast to the old ones, and are placed upon dry and healthy soil.

Stock.—The cattle and horses wintered well and without loss, and better care is being bestowed upon them from year to year.

Farm Implements.—With the exception of a plough and two harrows, only the ordinary implements for breaking up and clearing land, gardening, weeding and haying are in use.

Education.—There is one school, held in a building improvised for the purpose, fairly centrally situated in the village. It is ill-lighted and not at all suitable. Of late, this school is being exceptionally well attended, and its pupils are making good and sustained progress. Its teacher is very painstaking and energetic, and the children's parents contribute their efforts toward a punctual, good and regular attendance.

Characteristics and Progress.—These people are ambitious, industrious and provident, and have become very law-abiding. In general, their former inclinations in the opposite direction have, of late years, been gradually moulded for the better. Since the land whereon the village stands has been laid off, it will become improved in proportion as the old split cedar houses and their associations disappear. Regarding the remedy the progressive portion of the people have become fully alive, which is exemplified by a beginning being well under way.

Temperance and Morality.—No complaint of infraction in either respect was noted during the year just past.

KISGEGAS BAND.

Reserve.—The village of this band is about 68 miles to the north of here, situated on the right bank of the Babine river, and 3 miles above its confluence with the Skeena. For the length of 228 chains the reserve embraces both sides of the Babine river, and has a total area of 2,415 acres of mixed quality of land.

Population.—This band has a population of 239.

Health and Sanitation.—The health of these Indians has been excellent. The most necessary sanitary measures are being fairly well observed, and vaccination is attended to.

Occupations.—Remotely situated, these Indians are almost exclusively employed on the hunting and trapping grounds, which extend far beyond the head-waters of the Skeena and Babine rivers, Bear lake, and also to Stikine. They also resort extensively to fishing. When at home, the people occupy themselves in improving their gardens and in breaking up more land. The women and children gather and dry wild berries for winter use.

Buildings.—Here also the improved pattern of buildings is superseding the old, and entirely so on the new village site of late years allotted and subdivided.

Stock.—The stock, consisting of horses, wintered well.

Farm Implements.—No other implements are in use here but such as are required for gardening, breaking up land and haying.

Education.—The mission building, conveniently located between the old and the new villages, is also used for school purposes. During the year, the regular school was closed for want of a teacher. When school is being taught, the attendance for the winter season, is good, and the parents of the children encourage it.

Characteristics and progress.—These people are intelligent, industrious and law-abiding. They are still mainly employed on the hunting and trapping grounds, and those with homes at Bear lake seldom come here. The trapping grounds prove very productive and profitable, and, as a whole, much has been achieved in the general betterment of their welfare and condition.

Temperance and Morality.—Under both these headings their conduct is very good.

KULDOE BAND.

Reserve.—The village of this band is situated on the right bank of the Skeena and is connected with Kisgegas by a rough trail, a distance of about 25 miles. The reserves contains 446 acres of land of varying nature, which is almost equally divided in area on both banks of the Skeena.

Population.—The people of this band number 38.

Health and Sanitation.—The health of these people has been very good. They observe the necessary sanitary precautions and more of them were vaccinated.

Occupations.—Like the preceding band, the occupations of these people, with the exception of fishing, are almost altogether confined to their hunting and trapping grounds, but from year to year they enlarge the extent of their gardens. The women and children also gather and dry wild berries for winter use.

Buildings.—No other buildings but those of split cedar prevail here.

Stock.—These Indians have no stock.

Farm Implements.—Only implements for breaking up land, gardening and weeding are in use here.

Education.—There is no school at this village, but the children periodically attend that of Kisgegas, when it is being taught.

Characteristics and Progress.—These people are intelligent and law-abiding. Though somewhat isolated, they have adopted civilized habits and manners to a remarkable extent.

Temperance and Morality.—This band observes temperate and moral habits.

HAGWILGET DIVISION.

Location.—This division begins within 3 miles to the southeast of Hazelton, and extends in that direction a distance computed at 325 miles, and terminates at Fort George, on the Fraser river. But, in reality it includes additionally the area wherever over its wide expanse, range two bands of Sikanees and two bands of Naanees, between Blackwater and the Rocky mountains.

Language.—Hagwilget or the Déné, a language of a small vocabulary with shifting intonation, is spoken and understood by all the Indians to be dealt with hereinafter.

Reserves.—The reserves of this division comprise an area of 29,510 acres of agricultural, grazing, hay and timber land, with 19 villages under the Babine and Carrier groups, collectively.

The natural features of the reserves are principally flat-lying meadows bordering on lakes, and more or less timbered toward the hills.

Population.—This division embraces a total population of 1,966.

Nation.—All the bands in review in the subsequent account comprise the whole of the Hagwilget or Déné nation.

ROCHER DÉBOULÉ BAND.

As many remarks that might be made about this band are equally applicable to those that follow, some of which are very small, they will not be made under the bands individually, but will be summarized in conclusion.

Reserve.—The village of this band is situated on the left bank of the Bulkley river, and at its main canyon, 3 miles to the southeast of Hazelton. The reserve comprises both sides of that river, and contains an area of 443 acres, which is assigned to the Getanmax (Hazelton) band.

Population.—The population is 161.

MORICETOWN BAND.

Reserve.—The village of this band is located on the left bank of the Bulkley river, and at its second big canyon. In area the reserve is almost evenly divided on both sides of the river, and contains 1,853 acres.

Population.—This band has a population of 157.

FORT BABINE BAND.

Reserve.—The village is situated on the right shore of Babine lake, near its discharge, the Babine river, where there is a bridge of about 200 feet in length. The reserve has an area of 894 acres, distributed on each bank.

Population.—The population of this band is 153.

OLD FORT BABINE BAND.

Reserve.—The village is on the right and the reserves are on both shores of the lake, and comprise an area of 359 acres.

Population.—This band numbers 134.

YUCUTCE BAND.

Reserve.—The village and reserves are located at the head of Stuart lake, on the intervening 9 miles of land between Babine and Stuart lake, or portage.

Population.—This band has a population of 16.

TATCHÉ BAND.

Reserve.—The village and reserves are situated on the left shore of Stuart lake, and the former at the mouth and left bank of the Tatché river. The reserve area amounts to 1,779 acres.

Population.—The population of this band is 64.

PINTCE BAND.

Reserve.—The village and reserve are on the left shore of Stuart lake, and the former at the mouth and right bank of the Pintce river. The reserve consists of 728 acres.

Population.—This band numbers 46.

GRAND RAPIDS BAND.

Reserve.—The village and reserve are on the right bank midway up the Tatché river, at this point commonly called Trembleur river. The reserve area is 584 acres.

Population.—This band has a population of 25.

TSISLAINLI WITH TSISLI BAND.

The two villages and reserves of these, the people of one and the same band, are at the head of Trembleur lake and left bank and mouth of Tatla river. The reserves comprise an area of 1,291 acres.

Population.—This band has a population of 21.

STUART LAKE BAND.

Reserve.—The village and reserves of this band are on the left shore of Stuart lake, and at its discharge, the Stuart river. The total reserve area is 2,875.

Population.—This band numbers 197.

STELLA BAND.

Reserve.—The village and reserve of this band are on the right bank of the Stella river and near its discharge into Fraser lake. The reserve area is 2,077 acres.

Population.—This band has a population of 60.

FRASER LAKE BAND.

Reserve.—The village and reserve of this band are on the left shore of Fraser lake and at its discharge, the Natleh river. The reserve contains 1,949 acres.

Population.—The population of this band is 64.

CHISLATTA LAKE BAND.

Reserve.—No reserves are yet allotted to the Indians of this band, with three separate villages to the south of the telegraph line, south. Of these, Belgatcé and Stilachola are situated on the north shore of the lake, and Chislatlate on the west end and head thereof.

Population.—The population of this band, consisting of three villages, totals 76.

FRANCIS LAKE BAND.

Reserve.—Likewise, no reserves are yet allotted to this band, with habitations, in one locality (Tatchgaisgak) on the south shore, and another (Tatla) on the north shore of the lake. The last named is situated on the head of the lake and near the mouth and left bank of the Nadina river.

Population.—This band has a population of 32.

STONY CREEK BAND.

Reserve.—The village of this band is located on the right bank of Stony creek, and the reserve on both of its banks extends down to its discharge into Noolka lake. The reserve area is 7,488 acres.

Population.—This band numbers 110.

FORT GEORGE BAND.

Reserves.—The village is on reserve No. 1, on the right bank of the Fraser; No. 2 reserve is situated on the same side of that river; No. 3 is located on the left bank of the Nechako river, with No. 4 on the latter's right bank, and also on the right bank

and mouth of Chilako, one of its eastern affluents. In area, the reserves comprise 3,095 acres.

Population.—This band has a population of 123.

BLACKWATER BAND.

Reserves.—Reserve No. 1 is located on the right bank of the Fraser river; No. 2, on the left bank of the Blackwater river, and No. 3, on the eastern shore of Nattesley or Bobtail lake; altogether they amount in area to 537 acres.

Population.—The population of this band is 68.

MCLEOD LAKE BAND.

Reserve.—The village is situated on the western shore of McLeod lake, and the reserve on both banks of long river. The reserve contains an area of 286 acres.

Population.—This band numbers 99.

FORT GRAHAME AND LAKE CONNELLY BANDS OF SIKANEES.

Location.—Fort Grahame is the principal trading post of the first mentioned band of Sikanees, and Connelly lake outpost of the latter. Their hunting and trapping grounds extend to all points of dispersion over an area of about 400 miles of mountains, lakes, rivers and swamps to the east of their respective trading posts.

Habits and Customs.—Both of these bands are nomadic in their habits. They are averse to fish diet and subsist entirely on fresh and smoked caribou, moose and beaver meat, lynx, rabbits and grouse. Under these conditions, these Indians can only travel in units of single families.

Population.—From the best of information, the Fort Grahame band numbers about 89.

The Connelly Lake band has a population of about 118.

CONNELLY LAKE BAND OF NAANEES.

Location.—Under conditions similar to those of the two preceding bands two semi-nomadic bands of Naanees range over a large expanse of country to the north of Lake Connelly.

Population.—The population of these two bands is about 153.

REMARKS CONCERNING HAGWILGET DIVISION.

Health and Sanitation.—The Indians are made aware of the importance of general cleanliness. Many of them have been vaccinated, and no contagion of any kind appeared, and the best of health prevailed.

Occupations.—The principal occupations are hunting, trapping and fishing and looking after stock, mainly consisting of horses. The bands of Rocher Déboulé, Moricetown and Fort Babine engage in packing with their horses; the latter occupation is likewise followed by the Indians of Stony creek. Those of Stuart lake and Fort George do considerable freighting by canoes. In general of late they all are devoting more attention to their gardens and in breaking up land.

Buildings.—With the exception of the Sikanee and Naanee Indians, more interest is being shown in constructing better houses in healthy localities.

Stock.—Likewise with the exception of the outlying bands just referred to, there are cattle and horses in all the localities, and these wintered exceptionally well, and the means of their provender and shelter are continuing to improve from year to year.

Farm Implements.—Barring a mower and horse-rake at Moricetown, the implements are still such as scythes, hand-rakes and others useful in clearing and tilling the soil.

Education.—The only school of this division, is the one at the Stuart Lake mission. There, considerable progress is being made and the parents of the children assist in securing good attendance.

Characteristics and Progress.—As a whole, the Indians are law-abiding and tractable. Since, for those further removed, mixed employments are wanting, the results are yet correspondingly small. But nevertheless, what thus far has been accomplished, will make these people more ready to take hold when a change of conditions soon arises. In their way, the stock is being looked after; the areas of their gardens are constantly becoming enlarged and more care is being bestowed upon them.

Temperance and Morality.—During the year, no information as to infraction under either of these terms was received.

GENERAL REMARKS.

Population.—The population of the two divisions of this agency being 1,150, and 1,966, respectively, the total population is 3,116.

Reserves.—With an area of 19,575 acres, of the Kitsun division, and 29,510 acres of the Hagwilget division, this agency contains a total reserve area of 49,085 acres of agricultural, grazing, hay and timber land, inclusive of some for fishing grounds.

I have, &c.,

R. E. LORING,

Indian Agent.

BRITISH COLUMBIA,
COWICHAN AGENCY,
DUNCANS, May 2, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the affairs of this agency for the year ended March 31, 1908.

Agency.—This agency is situated on the east coast of Vancouver island and extends from Cape Mudge on the north to Sooke on the south, including the reserves on the different islands in the gulf of Georgia.

Area.—The total area of the reserves in this agency is 19,941 acres, forming a portion of the territory occupied by the Cowichan nation, whose language and influence formerly extended to the bays and sounds on the American side of the gulf and up the Fraser river as far as Yale.

These reserves are occupied by the following bands:—

SOOKE BAND.

Reserves.—(Nos. 1, 2, 3 and 4). The reserves of this band are situated on the straits of Juan de Fuca about 25 miles southwest of the city of Victoria; and contain an area of 166 acres.

Population.—The population of the band is 26.

Health and Sanitation.—The health of these Indians is very good. They are careful to keep their dwellings clean.

Occupations.—The Indians are chiefly engaged in farming, fishing, and working at the fish-traps.

Buildings.—Their dwellings are in very good condition, many of their houses being constructed of lumber, and painted.

Stock.—They have a number of good horses and cattle, and take good care of them.

Farm Implements.—Their implements, of which they have a good supply, are well taken care of.

Education.—There is no school on this reserve. Some of the children attend the Kuper Island industrial school.

Characteristics and Progress.—These Indians are industrious and law-abiding and are making satisfactory progress.

Temperance and Morality.—They are temperate and moral.

CHEERNO BAND (BEECHER BAY.)

Reserves.—(Nos. 1 to 11 inclusive). These reserves are situated on the straits of Juan de Fuca, about 15 miles southwest of Victoria, and contain 779 acres. As most of the land in these reserves is hilly and rocky, very little farming is done.

Population.—The population of the band is 42.

Health and Sanitation.—They have enjoyed good health throughout the year, and the sanitary regulations are well attended to.

Occupations.—These Indians are chiefly engaged in farming, fishing, and working at the fish-traps and canneries.

Buildings.—Their dwellings are very good, principally large rancherie houses.

Stock.—Their stock is of fair quality.

Farm Implements.—They have a few farm implements.

Education.—There is no school on these reserves.

Characteristics and Progress.—These Indians are fairly industrious and show a desire to better their condition.

Temperance and Morality.—These Indians are fairly temperate and seldom get into trouble.

SONGHEES BAND.

This band comprises the following sub-families: the Esquimalt and Discovery Island Indians as well as the Songhees Indians.

Reserves.—(Nos. 1, 2, 3 and 4). These reserves are situated on the harbours of Victoria and Esquimalt; and on the islands in the straits of Juan de Fuca; the total area of these reserves is 306 acres.

Population.—The population of this band is 140.

Health and Sanitation.—The health of these Indians is very good, first-class water being supplied to them by the Esquimalt Water Works Company. Their homes are kept clean.

Occupations.—They engage in fishing, hunting, stevedore work, farming, working in saw-mills and factories.

Buildings.—A few live in the large rancherie houses; others have frame and lumber dwellings, well furnished.

Stock.—They have a number of good horses and cattle, and take good care of them.

Farm Implements.—They have a good supply of farm implements and take good care of them.

Education.—There is a school on the Songhees reserve, which is fairly well attended.

Characteristics and Progress.—These Indians are very industrious and most of them well-off.

Temperance and Morality.—They are temperate and moral, although there are a few who are fond of liquor and will procure it whenever possible.

BANDS IN THE SAANICH DISTRICT.

Reserves.—The following bands occupy reserves numbered from 1 to 13 inclusive, in Saanich district, viz., Malakut, Tsekum, Pauquachin, Tsartlip and Tsawout, the total area of the said reserves being 3,313 acres.

Population.—The population of these bands is 234.

Health and Sanitation.—The health of these Indians has been very good during the past year, and the sanitary condition of the villages has been very good.

Occupations.—They engage in farming, fishing, hop-picking, and working in the cement works and mines.

Buildings.—A few live in the rancherie houses, others have frame and lumber dwellings and well furnished.

Stock.—They have good stock and take good care of it; many of the animals are of improved breeds.

Farm Implements.—They have a good supply of the most modern farm implements and take good care of them.

Education.—There are two schools provided for these Indians, one situated at Tsawout, and the other near Tsartlip reserve, and some of the children attend the Kuper Island industrial school.

Characteristics and Progress.—These Indians are industrious and law-abiding and make good progress.

Temperance and Morality.—They are fairly temperate and moral; but a few will procure intoxicants whenever possible.

BANDS IN COWICHAN DISTRICT.

Reserves.—The following bands occupy reserves numbered 1 to 9 inclusive, in Cowichan valley, which is situated on the east coast of Vancouver island, about 40 miles north of the city of Victoria, viz., Kilpaulus, Comeakin, Clemclemaluts, Khenipson, Quamichan and Somenos. The total area of these reserves is 6,136 acres.

Population.—The total population of these bands is 620.

Health and Sanitation.—All the villages are situated on the banks of the Koksilah or Cowichan river, thus affording a constant supply of fresh water and good drainage; the sanitary conditions are good.

Occupations.—Their chief occupations are farming, fishing, hunting, teaming, boat and canoe building, stevedore work, working in canneries, hop-picking and as trackmen on railways.

Buildings.—The class of buildings is constantly improving and they are well kept.

Stock.—They have some splendid horses, many of which are improved breeds, and they take good care of them.

Farm Implements.—They have all the modern and up-to-date kinds of machinery, and take good care of them.

Education.—There are four schools provided for these Indians, one situated at Somenos, one at Clemclemaluts, one at Quamichan, and one near Koksilah village. The two former are supported by a grant from the department, and the two latter by

the Women's Missionary Society of the Methodist Church. The children are making very fair progress.

Characteristics and Progress.—These Indians are industrious and law-abiding people.

Temperance and Morality.—They are fairly temperate and moral; a few of them will procure intoxicants whenever possible.

HELLELT BAND.

Reserves.—(Nos. 1 and 2 of the Chemainus band). One reserve is situated on the south bank of the Chemainus river about a mile and a half from the mouth; the other on an island at the mouth of the same river. The two reserves contain a combined area of 427 acres.

Population.—The population of this band is 30

Health and Sanitation.—These Indians have enjoyed good health throughout the year, and the sanitary regulations are well attended to.

Occupations.—These Indians are chiefly engaged in farming, fishing, working at the fish-traps and canneries.

Buildings.—Their dwellings are very good, principally large rancherie houses.

Stock.—Their stock is of fair quality.

Farm Implements.—They have a good supply of farm implements, and take good care of them.

Education.—There is no school on this reserve.

Characteristics and Progress.—They are industrious and law-abiding Indians.

Temperance and Morality.—They are fairly temperate and moral.

THE SICCAMEEN AND KULLEETS BAND.

Reserves.—(Nos. 10, 12 and 13 of the Chemainus band). The main reserve is situated between Oyster harbour and Chemainus bay. One reserve is on the western shore of Oyster harbour, and a fishing station on the left bank of the Chemainus river near its mouth, the total area of which is 3,084 acres. There is no line dividing the land of the two bands.

Population.—The population of this band is 96.

Health and Sanitation.—They have an ample supply of clear spring-water, and keep their dwellings clean.

Occupations.—They engage chiefly in fishing and cultivating oysters.

Buildings.—They have comfortable dwellings, and keep them in good condition.

Stock.—They have a number of good horses and cattle, and take good care of them.

Farm Implements.—They have a good supply of farm implements, and take good care of them.

Education.—There is no school on these reserves.

Characteristics and Progress.—They are industrious and law-abiding, and are making good progress in farming.

Temperance and Morality.—They are temperate and moral people.

LYACKSUN BAND.

Reserves.—(Nos. 3, 4 and 5 of the Chemainus band). These reserves are situated on Valdez island, and consist of three reserves, which have a combined area of 1,840 acres.

Population.—The population of this band is 81.

Health and Sanitation.—The health of these Indians has been very good and the sanitary conditions are good.

Occupations.—These reserves are nearly all rock or heavy timber. The Indians do very little farming, boat and canoe building and fishing being their chief occupations. They own a steam tug, which is used in towing logs.

Buildings.—They have comfortable dwellings, and seldom live in the large rancherie houses.

Stock.—They have some well-bred stock, but it is allowed to run wild on the island, and consequently is not given much attention.

Farm Implements.—Their implements, of which they have a good supply, are well taken care of.

Education.—There is no school on this reserve, but a number of the children attend the Kuper Island industrial school.

Characteristics and Progress.—These Indians are industrious and law-abiding, and are making steady progress.

Temperance and Morality.—They are on the whole temperate and moral people.

PENELAKUT BAND.

Reserves.—(Nos. 6, 7 8 and 9). This reserve includes Llmalche and Tsussie bands. These reserves are situated on Kuper island and Tent island. There is also a small reserve belonging to this band situated at the mouth of Chemainus river. The total area of these reserves is 2,332 acres.

Population.—The total population is 205.

Health and Sanitation.—These Indians have enjoyed good health during the past year, and the sanitary conditions are good.

Occupations.—These Indians engage chiefly in fishing, boat and canoe building, farming, working stevedore, and hunting.

Buildings.—Their buildings are in fair condition, they are kept neat and clean.

Stock.—They have a number of fair cattle and take good care of them.

Farm Implements.—They are well supplied with farm implements and take good care of them.

Education.—The Kuper Island industrial school is situated on one of the reserves and many of the children attend the same.

Characteristics and Progress.—These Indians are industrious and law-abiding people.

Temperance and Morality.—They are temperate and moral, a few of them only being addicted to the use of liquor.

NANAIMO BAND.

Reserve.—(Nos. 1 to 6 inclusive of the Nanaimo band.) This reserve consists of a reserve on the Nanaimo harbour and one on the Nanaimo river, with a small fishing station on the southern shore of Gabriola island. The total area of these reserves is 637 acres.

Population.—The population of this band is 160.

Health and Sanitation.—These Indians have enjoyed good health, and the sanitary conditions are good.

Occupations.—The chief occupations of these Indians are farming, fishing, working in coal mines and trimming coal in ships.

Buildings.—A few of them have comfortable dwellings, and keep them clean and neat, but most of them live in the large rancherie houses.

Stock.—They have some very good stock, and they take good care of it.

Farm Implements.—They have a good supply of all farm implements, and take good care of them.

Education.—There is a school on this reserve, and they take considerable interest in educational matters.

Characteristics and Progress.—These Indians are industrious and law-abiding and are making steady progress.

Temperance and Morality.—A majority of these Indians are temperate and moral; a few of them will procure intoxicants whenever possible.

SNONOWAS BAND (NANOOSE).

Reserve.—This reserve is situated on the southern shore of Nanoose harbour and has an area of 209 acres.

Population.—The population of this band is 14.

Health and Sanitation.—These Indians are fairly healthy, and the sanitary conditions are all that could be expected.

Occupations.—These Indians are chiefly employed in fishing and manufacturing dog-fish oil, they do very little farming.

Buildings.—They have a fair class of dwellings.

Stock.—They keep a few stock of medium quality.

Farm Implements.—They possess very few farm implements.

Education.—There is no school on this reserve and very few children.

Characteristics and Progress.—They are industrious and law-abiding and are making steady progress.

Temperance and Morality.—They are temperate, with but a few exceptions, and moral.

QUALICUM BAND.

Reserve.—This reserve is situated on the mouth of the Qualicum river. It has an area of 197 acres.

Population.—The population of this band is 14.

Health and Sanitation.—The health of these Indians has been very good and the sanitary regulations well observed.

Occupations.—These Indians are chiefly engaged in farming, fishing, hunting and acting as guides for fishing and hunting parties.

Buildings.—Their dwellings are comfortable and their other buildings are kept in very good condition.

Stock.—They have very little stock and only of medium quality.

Farm Implements.—They own very few farm implements.

Education.—There is no school on this reserve.

Characteristics and Progress.—They are industrious and law-abiding Indians.

Temperance and Morality.—They are temperate and moral.

COMOX BAND.

Reserve.—(Nos. 1, 2 and 3).—This reserve is situated on the southern shore of Comox harbour and on the left bank of the Pentledge river at its confluence with the Tsolum river. In connection with this reserve is a graveyard on Goose spit, Comox harbour. The area of this reserve is 378 acres.

Population.—The population of this reserve is 44.

Health and Sanitation.—Their health has been very good and sanitary regulations well observed.

Occupations.—These Indians chiefly engage in fishing, hunting and farming.

Buildings.—Their dwellings are comfortable and well kept.

Stock.—They have a number of fair horses and some cattle.

Farm Implements.—They are fairly well equipped with farm implements.
Education.—There is no school on this reserve.
Characteristics and Progress.—They are fairly industrious and law-abiding.
Temperance and Morality.—They are temperate and moral Indians.

GALIANO BAND.

Reserve.—(No. 9 of the Penelakut band). This reserve is located on the northern extremity of Galiano island and the area is included in that of the Penelakut band.

Population.—The population of this band is 31.

Health and Sanitation.—These Indians have enjoyed good health and sanitary precautions are fairly well observed.

Occupations.—These Indians are chiefly engaged in fishing and boat-building.

Buildings.—There are very few dwellings on this reserve.

Stock.—These Indians have not any stock.

Farm Implements.—They have no farm implements.

Education.—The children attend the Kuper Island industrial school.

Characteristics and Progress.—They are fairly industrious and good people.

Temperance and Morality.—These Indians are temperate and moral.

MAYNE ISLAND BAND.

Reserve.—(No. 6 of the Saanich band). This reserve is situated on the northwest extremity of Mayne island. The area of this reserve is included in that of the Saanich bands.

Population.—The population of this band is 24.

Health and Sanitation.—Their health has been very good and sanitary conditions good.

Occupations.—These Indians engage chiefly in fishing, hunting and working for the white settlers.

Buildings.—As this is only a fishing station, their buildings are mere shanties, constructed of cedar slabs.

Stock.—They have only a few sheep.

Farm Implements.—These Indians have not any farm implements.

Characteristics and Progress.—These Indians are industrious and law-abiding and make a very good living by fishing.

Temperance and Morality.—They are temperate and moral people.

COWICHAN LAKE BAND.

This reserve is situated on the northern shore of Cowichan lake, near its outlet; it has a total area of 130 acres. During the year a son of the late Sam Livingston, Alfred, and his wife have returned to live on the reserve, making the population three. Alfred says he now intends to make this his home.

GENERAL REMARKS.

During the year the Indians have been able to secure plenty of work at good wages, which offset the failure of the fishing at the Fraser river. They have been fairly industrious and law-abiding; many owning good horses, which are well cared for.

Unfortunately the death-rate is very high, the principal cause of death was grippe and tuberculosis.

The Kuper Island industrial and the several day schools continue to do good work and the work is much appreciated by the Indians.

I have, &c.,

W. R. ROBERTSON,
Indian Agent.

British Columbia,
Fraser River Agency,
New Westminster, April 1, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report on the affairs of this agency for the year ended March 31, 1908.

Tribe or Nation.—All the Indians of this agency belong to branches of the Salish nation.

BANDS IN THE CHILLIWACK DISTRICT.

Reserves.—The following bands occupy reserves in close proximity to each other in this district, comprising a total area of 3,841 acres, viz.:—Aitchelitz, Kwawkwawapilt, Squiahla, Skwah, Skulkayan, Skway, Soowahlie, Tzeachten and Yukkwekwioose.

Population.—The total population of these nine bands is 317.

Health and Sanitation.—They have enjoyed good health throughout the year, and they have nearly all been vaccinated. Sanitary regulations are well observed in their villages.

Occupations.—They depend chiefly on fishing, farming, and hop-picking, and they also work as farm-hands for their white neighbours.

Buildings, Stock and Farm Implements.—Their dwellings and other buildings are fairly good and are kept in repair. They have some very good stock which compares very favourably with that of their white neighbours. They are fairly well supplied with farm implements.

Education.—They are much interested in the education of their children, and send them to the Coqualeetza Institute, Chilliwack, and to St. Mary's Mission school.

Characteristics and Progress.—They are an industrious and law-abiding people, and are making satisfactory progress.

Temperance and Morality.—Some of them are fond of liquor, but they are very moral.

BANDS ON HOWE SOUND, BURRARD INLET AND SQUAMISH RIVER.

Reserves.—These bands, known as the Squamish Indians, and occupying reserves containing a total area of 6,806 acres, are as follows: Burrard Inlet No. 3, Kapilano, Squamish (Howe Sound), Seymour Creek, Mission (Burrard Inlet), and False Creek.

Population.—The total population of these six bands is 391.

Health and Sanitation.—Their health has been good, they observe the necessary sanitary precautions, and vaccination is attended to from time to time.

Occupations.—When at home, these people are occupied at farming and gardening, but their main pursuits are fishing, hunting, hand-logging, and loading lumber in ships at the saw-mills.

Buildings, Stock and Farm Implements.—Their houses are mostly of a modern type, especially those constructed in recent years. Their stock is well cared for, as are also their farm implements.

Education.—Most of the children of school age belonging to these bands attend the Squamish Mission boarding school.

Characteristics and Progress.—They are very industrious and are getting along fairly well.

Temperance and Morality.—They are fairly temperate and strictly moral.

CHEAM BAND.

Reserve.—The reserve of this band is situated on the south bank of the Fraser river about 80 miles from its mouth, and contains an area of 1,433 acres.

Population.—The population of this band is 98.

Health and Sanitation.—The health of these Indians has been very good during the past year, no epidemic or sickness of a serious nature appearing amongst them. Their premises are always kept in a sanitary condition.

Occupations.—The chief resources from which they derive a living are farming, fishing, hop-picking and hunting. They also work as farm-hands for their white neighbours.

Buildings, Stock and Farm Implements.—Their dwellings are, in most instances, well built, and they have good barns and outbuildings. Their stock is generally of good breed, and they are well supplied with farm implements.

Education.—As a general rule, these Indians desire to have their children educated, and send them to St. Mary's Mission boarding school.

Characteristics and Progress.—They are very good workers, and are a law-abiding people.

Temperance and Morality.—Generally speaking, these Indians are temperate, and they are also moral.

CHEHALIS AND SCOWLITZ BANDS.

Reserves.—The Chehalis and Scowlitz bands occupy reserves on Harrison river, Scowlitz reserve being at its mouth and Chehalis about 4 miles up stream. They have a total area of 3,144 acres.

Population.—The combined population of these two bands is 162.

Health and Sanitation.—They have had fairly good health, their buildings and surroundings are kept in a sanitary condition, and vaccination has been attended to from time to time.

Occupations.—They are employed for the most part at farming, fishing, hunting and logging. They also earn considerable money at hop-picking, Johnny Leon, the chief of the Chehalis band, acting as foreman of one of the large hop-yards at Agassiz.

Buildings, Stock and Farm Implements.—Their dwellings are mostly all of modern type, and they have good outbuildings. Their stock is well taken care of, and their farm implements are kept under cover when not in use.

Education.—Most of them are anxious to have their children educated, many of whom attend St. Mary's Mission boarding school.

Characteristics and Progress.—They are law-abiding and industrious, and are making satisfactory progress.

Temperance and Morality.—They are a temperate and moral people.

COQUITLAM BAND.

Reserve.—The reserve of this band is situated on the Coquitlam river, about 6 miles from New Westminster, and contains an area of 208 acres.

Population.—The population of this band is 26.

Health and Sanitation.—These Indians have been free from any serious sickness during the year. They keep their village in a fairly sanitary condition.

Occupations.—Farming, fishing, and hunting are the principal occupations of this band, they also work in logging-camps and as farm-hands.

Buildings, Stock and Farm Implements.—Most of these Indians have well built houses. They do not keep much stock, but they give the best of attention to what they have.

Characteristics and Progress.—They are industrious and law-abiding, and making some progress.

Temperance and Morality.—Some of them are fond of liquor, but they are fairly moral.

DOUGLAS, SKOOKUM CHUCK, SAMAHQUAM AND PEMBERTON MEADOWS.

Reserves.—These bands occupy reserves situated between the head of Harrison lake, along the Lillooet portage to Pemberton, and contain a combined area of 7,497 acres.

Population.—The population of these four bands is 499.

Health and Sanitation.—Their health has been fairly good throughout the year. The sanitary condition of their villages is good, and many of them have been vaccinated from time to time.

Occupations.—Their chief pursuits are hunting, fishing, packing and farming. They also act as guides for mining and timber prospectors, and the women earn considerable money at basket-making.

Buildings, Stock and Farm Implements.—Their dwellings are mostly all frame structures, and they have good barns and outbuildings. They have a considerable number of horses and cattle, which are well cared for during winter. They are fairly well supplied with farm implements, most of them owning what they have.

Characteristics and Progress.—They are industrious and law-abiding, and are making some progress.

Temperance and Morality.—They are temperate and moral.

EWAWOOES AND TEXAS LAKE BANDS.

Reserves.—The reserves of these bands are situated, the former on the south bank of the Fraser river, about two miles east of Hope, and the latter on the north bank of the Fraser river, about seven miles east of Hope. They contain a combined area of 893 acres.

Population.—The population of these two bands is 48.

Health and Sanitation.—Their health has been good during the year, and sanitary regulations are well observed by them.

Occupations.—The chief resources from which these Indians derive their livelihood are hunting, farming, fishing, and hop-picking.

Buildings, Stock and Farm Implements.—Their houses are generally well built. Their stock compares favourably with that of their white neighbours and they take good care of their farm implements.

Education.—Some of the children attend St. Mary's Mission boarding school, their parents being anxious that they should be educated.

Characteristics and Progress.—These Indians are very well behaved and industrious.

Temperance and Morality.—They are both moral and temperate.

HOPE BAND.

Reserve.—The reserve of this band is situated on the north bank of the Fraser river, about 100 miles from its mouth, and has an area of 1,400 acres.

Population.—The population of this band is 82.

Health and Sanitation.—Their health has been good, no epidemic appearing among them. Sanitary precautions are well observed, and attention has been given to vaccinating.

Occupations.—Their chief pursuits are farming, fishing, hop-picking and hunting, and some of them work as sectionmen for the Canadian Pacific Railway Company.

Buildings, Stock and Farm Implements.—Their dwellings are comfortable frame buildings, their stock is well cared for, and they have a good supply of farm implements.

Education.—There is no school on their reserve, but many of the children attend St. Mary's Mission boarding school.

Characteristics and Progress.—They are industrious and law-abiding, and have given general satisfaction during the past year.

Temperance and Morality.—They are temperate as a rule, and strictly moral.

HOMALCO AND KLAHOOSE BANDS.

Reserves.—The reserves of these bands are situated in the vicinity of Bute inlet and Malaspina strait; they contain a total area of 4,738 acres.

Population.—The total population of these two bands is 164.

Health and Sanitation.—Neither of these bands has had any serious outbreak of disease amongst them, and their surroundings are kept in a sanitary condition.

Occupations.—Their principal occupations are logging, hunting, and fishing; they also do a small amount of farming.

Buildings, Stock and Farm Implements.—Most of their houses are neat and well built. They keep very little stock, and possess no farm implements except those used by hand.

Education.—They have no school, and consequently none of them have had the advantages of education.

Characteristics and Progress.—The members of these two bands are industrious as a rule, and are making marked progress.

Temperance and Morality.—They are temperate and strictly moral.

KATSEY BAND.

Reserve.—The reserve of this band is situated on the north bank of the Fraser river, about 10 miles from New Westminster, and contains an area of 385 acres.

Population.—The population of this band is 77.

Health and Sanitation.—Their health during the past year has been exceptionally good. There is no cause for complaint with regard to the sanitary condition of their houses and surroundings, and nearly all of them have been vaccinated.

Occupations.—These Indians derive their livelihood chiefly from fishing, hunting and mixed farming. They also work as farm-hands for white settlers.

Buildings, Stock and Farm Implements.—They all live in good, comfortable frame dwellings. They keep some good stock, which is well cared for, and they have a few farm implements.

Education.—Most of the children attend St. Mary's Mission boarding school, the parents taking a lively interest in the education of their children.

Characteristics and Progress.—They are law-abiding and industrious and progressing steadily.

Temperance and Morality.—They are temperate and moral.

LANGLEY AND WHONOCK BANDS.

Reserves.—The reserves of these bands are situated, the former on McMillan island in the Fraser river, about 20 miles east of New Westminster, and the latter on the north bank of the Fraser river, about 24 miles east of New Westminster. They contain a combined area of 1,432 acres.

Population.—The total population of these two bands is 68.

Health and Sanitation.—They have enjoyed good health during the year and have had no contagious disease among them. They keep their villages clean and in a sanitary condition, and the majority of them have been vaccinated from time to time.

Occupations.—Their principal pursuits are mixed farming, and fishing for the canneries during the salmon-canning season. They also earn a good deal at hop-picking, and working as farm-hands.

Buildings, Stock and Farm Implements.—Their dwellings are all good frame buildings, and are usually kept well repaired. Their stock is of good breed and well cared for. They are well equipped with farm implements.

Education.—They appreciate the advantages of education, and many of their children have attended St. Mary's Mission boarding school.

Characteristics and Progress.—They are an ambitious and industrious people, and are making satisfactory advancement.

Temperance and Morality.—The majority of these two bands are considered temperate, although there are a few of them who will drink liquor when they can procure it. They are a very moral people.

MUSQUEAM BAND.

Reserve.—The reserve of this band is situated on the north arm of the Fraser river, about one mile from its mouth, and contains an area of 452 acres.

Population.—The population of this band is 96.

Health and Sanitation.—The general health of these Indians has been good. They observe the necessary sanitary precautions, and nearly all of them have been vaccinated.

Occupations.—Their chief industries are fishing, mixed farming and logging; they also work as farm-hands for white settlers.

Buildings, Stock and Farm Implements.—Their houses are of a fair class. They have some good stock, which is properly attended to. They are well supplied with farm implements, which are carefully housed when not in use.

Education.—The parents are fully conscious of the many advantages of education, and the children of school age attend school at the Coqualeetza Institute, Squamish Mission, and Kuper Island schools, respectively.

Characteristics and Progress.—The members of this band are industrious as a rule, and are steadily advancing.

Temperance and Morality.—The laws of temperance and morality are fairly well observed by these people.

MATSQUI BAND.

Reserve.—The reserve of this band is situated on the south bank of the Fraser river, about 30 miles from New Westminster, and contains an area of 1,072 acres.

Population.—The population of this band is 44.

Health and Sanitation.—Their general health has been good, and sanitation is fair. They have been vaccinated from time to time.

Occupations.—They are engaged for the most part at fishing and agricultural pursuits, and they also earn a good deal at hop-picking.

Buildings, Stock and Farm Implements.—They are very negligent in regard to repairing their buildings. They have some stock and a few farm implements.

Education.—Some of the children of school age attend St. Mary's Mission boarding school.

Characteristics and Progress.—They are fairly industrious, and law-abiding, but are making slow progress.

Temperance and Morality.—Some few of them are fond of liquor, but they are strictly moral.

NEW WESTMINSTER BAND.

Reserve.—These Indians have reserves at New Westminster and at Brownsville, respectively, comprising an area of 32 acres.

Population.—The population of this band is 47.

Health and Sanitation.—With the exception of a few cases of grippe and ordinary ailments, the health of this band has been excellent. Vaccination has been attended to, and they observe the necessary sanitary precautions.

Occupations.—They spend most of their time at fishing, hunting and trapping, and supply the local market with a considerable quantity of the fish and game required. Their farming is only on a very small scale.

Buildings, Stock and Farm Implements.—Their houses are all comfortable frame buildings. They do not keep much stock, and have no implements except such as are used by hand.

Education.—They take considerable interest in educational matters.

Characteristics and Progress.—They are law-abiding and industrious, and provide well for those depending upon them.

Temperance and Morality.—They are temperate, with a few exceptions, and are also moral.

NICOMEN AND SKWEAHM BANDS.

Reserves.—These Indians occupy two reserves on the north bank of the Fraser river, about 44 miles from New Westminster, comprising an area of 636 acres.

Population.—The combined population of these two bands is 40.

Health and Sanitation.—With the exception of ordinary ailments, their health throughout the year has been good, no epidemic of any kind having visited them. Sanitary conditions are fair, and vaccination is attended to from time to time.

Occupations.—Farming, fishing and hop-picking constitute their chief occupations. They usually fish for the canneries during the salmon-canning season.

Buildings, Stock and Farm Implements.—They all have comfortable frame dwellings. Their stock is well kept during winter, and their farm implements are carefully put under cover when not in use.

Education.—They are rather indifferent in regard to education, and very few of them have ever attended school.

Characteristics and Progress.—They are a simple-minded people, adhering to many of their old customs, and are not making much progress.

Temperance and Morality.—Some of these Indians drink whenever they can procure liquor, but they are fairly moral.

SEMIAMU BAND.

Reserve.—The reserve of this band borders on the international boundary line, and fronts on Semiamu bay; it contains an area of 392 acres.

Population.—The population of this band is 37.

Health and Sanitation.—They have enjoyed excellent health during the year, and the sanitary condition of their village is good.

Occupations.—They are engaged chiefly in fishing and agricultural pursuits.

Buildings, Stock and Farm Implements.—Nearly all of them have fairly good houses, which are kept clean and neat. They have some very good stock, as well as the most necessary farm implements.

Education.—They have no school, but some of the children attend St. Mary's Mission school.

Characteristics and Progress.—They are a law-abiding and rather easy-going people, and usually provide well for their families.

Temperance and Morality.—Considering their close proximity to the international boundary line, where they can procure liquor very easily, those addicted to the use of intoxicants are very few; and they are a very moral people.

OHAMIL BAND.

Reserve.—The reserve of this band is situated on the south bank of the Fraser river, about 74 miles east of New Westminster, and contains an area of 629 acres.

Population.—The population of this band is 54.

Health and Sanitation.—Generally speaking, these Indians have had fair health during the year, and the sanitary condition of their village is quite up to the average.

Buildings, Stock and Farm Implements.—Their dwellings are mostly all frame buildings. They keep some very good stock, and have a fair supply of farm implements.

Occupations.—Farming, fishing and hop-picking constitute the principal occupations of this band

Education.—They take much interest in educational matters, and send their children to St. Mary's Mission school, and to the public school near their reserve.

Characteristics and Progress.—They are industrious and law-abiding, and are steadily improving.

Temperance and Morality.—They may be described as a temperate and moral people.

POPCUM AND SQUAWTITS BANDS.

Reserves.—The reserves of these bands are situated on the south bank of the Fraser river, about 65 miles east of New Westminster, and contain a combined area of 5,326 acres.

Population.—The population of these two bands is 58.

Health and Sanitation.—Their health has been exceptionally good during the past year, the sanitary condition of their villages is quite up to the average, and nearly all of them have been vaccinated.

Occupations.—They depend chiefly on farming, fishing and hop-picking for a living.

Buildings, Stock and Farm Implements.—Their dwellings are mostly all of a good class. They have some horses and cattle, which are properly cared for. They are supplied with the most necessary farm implements.

Education.—Most of the children of school age attend school.

Characteristics and Progress.—These people are law-abiding, industrious and easy-going, and are advancing slowly.

Temperance and Morality.—They are temperate and moral.

SECHELT BAND.

Reserve.—The reserve of this band is situated on Sechelt peninsula, Malaspina strait, and contains an area of 1,800 acres.

Population.—The population of this band is 242.

Health and Sanitation.—Although no serious epidemic of any kind appeared amongst them during the year, yet many of them have suffered from grippe, colds and other common ailments. The sanitary condition of their village is excellent, and most of them have been vaccinated.

Occupations.—Their principal occupations are hunting, fishing and hand-logging. The women of the band are expert basket-makers, from which industry they derive a considerable revenue each year. They also do more or less gardening.

Buildings, Stock and Farm Implements.—Their houses are all well constructed frame buildings. They do not keep much stock, and have no farm implements except such as are used by hand.

Education.—They have a fine boarding school on their reserve, which is attended by all the children of school age.

Characteristics and Progress.—They are very honest, industrious and ambitious, and are making marked progress.

Temperance and Morality.—Drunkenness is practically unknown amongst these Indians, and they are strictly moral.

SUMASS BAND.

Reserves.—The reserves of this band are situated at Miller's Landing on the south bank of the Fraser river, and at Upper Sumas on Sumas lake, and contain an area of 1,370 acres.

Population.—The population of this band is 50.

Health and Sanitation.—Their health has been good, but sanitation in their village is not as good as on some of the other Indian reserves.

Occupations.—These Indians engage in agricultural pursuits, fishing, hunting and hop-picking.

Buildings, Stock and Farm Implements.—Their dwellings are mostly frame buildings. They have considerable stock, which is well taken care of. They have sufficient farm implements for their present requirements.

Education.—Hardly any of these Indians have ever attended school.

Characteristics and Progress.—They are law-abiding and fairly industrious.

Temperance and Morality.—They are temperate, with a few exceptions, and moral.

SLIAMMON BAND.

Reserve.—The reserve of this band is situated on Malaspina strait, and contains an area of 4,712 acres.

Population.—The population of this band is 105.

Health and Sanitation.—Their health has been good during the past year. The sanitary condition of their village is fully up to the average.

Occupations.—They earn their living chiefly by hunting, fishing and logging. They also do some farming on a small scale.

Buildings, Stock and Farm Implements.—They have comfortable houses, and good outbuildings. They do not keep much stock; and their farm implements consist only of such as are used by hand.

Characteristics and Progress.—They are good workers, and provide well for those depending upon them. They are also law-abiding.

Temperance and Morality.—Some few of them drink liquor whenever they can procure it, but they are moral.

SKWAHALOOK BAND.

Reserve.—The reserve of this band is situated on the north bank of the Fraser river, between Ruby Creek and Hope; it contains an area of 196 acres.

Population.—The population of this band is 16.

Health and Sanitation.—As a general rule, these Indians have enjoyed good health, and their houses and surroundings are kept in a sanitary condition.

Occupations.—Their principal occupations are fishing, hunting and mixed farming.

Buildings, Stock and Farm Implements.—They have good frame dwellings, which are generally kept in repair. Their stock is well cared for, as are also their farm implements.

Characteristics and Progress.—They are a law-abiding, simple-minded people, and are progressing favourably.

Temperance and Morality.—They are temperate and moral.

TCHEWASSEN BAND.

Reserve.—The reserve of this band is situated on the gulf of Georgia, near Point Roberts, and contains an area of 604 acres.

Population.—The population of this band is 49.

Health and Sanitation.—They have had fair health during the year, no serious epidemic appearing amongst them. The sanitary condition of their village is good, and they have all been vaccinated.

Occupations.—These Indians do a considerable amount of farming and stock-raising; they also fish for the canneries during the salmon-canning season.

Buildings, Stock and Farm Implements.—Their houses are mostly of a fair class; their stock is of good breed and well cared for during the winter months. They have all the most necessary farm implements.

Education.—They have no school on the reserve, but some of their children attend the public school near their village.

Characteristics and Progress.—They are law-abiding and industrious.

Temperance and Morality.—As a rule they are fond of liquor, but they are very moral Indians.

YALE BAND.

Reserve.—The Yale reserve is situated on the Fraser river, about 112 miles from its mouth, and contains an area of 1,100 acres.

Population.—The population of this band is 78.

Health and Sanitation.—These Indians have enjoyed excellent health during the past year, and the sanitary condition of their village is normal.

Occupations.—Agricultural pursuits, fishing and hunting are their chief occupations, and some of them work as sectionmen for the Canadian Pacific Railway Company.

Buildings, Stock and Farm Implements.—Their houses are of a modern type, and they have some good stables and outbuildings. They take good care of their stock and farm implements.

Education.—Some of the children of this band attend All Hallows school, and others St. Mary's Mission school.

Characteristics and Progress.—They are industrious and law-abiding, and are making fair progress.

Temperance and Morality.—They are temperate and moral.

GENERAL REMARKS.

A very disastrous fire occurred at Sechelt village on March 28, which resulted in the destruction of ten dwellings and the death of two very old Indians, who were not missed until their charred remains were found after the fire.

During the year the Sechelt band erected a very fine church on their reserve, the cost of which was upwards of $15,000.

The five schools of the agency were well attended throughout the past year; the general health of the pupils was good, and their advancement satisfactory.

I have, &c.,

R. C. McDONALD,

Indian Agent.

British Columbia,
Kamloops-Okanagan Agency,
Kamloops, May 26, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report on the affairs of this agency for the fiscal year ended March 31, 1908.

Location.—The Kamloops-Okanagan agency is scattered over the greater portion of Yale district, immediately north of the international boundary line; the district contains approximately 24,000 square miles. The agency contains an aggregate acreage of 333,578 acres.

Natural Subdivisions.—The agency is divided naturally by the rivers which drain it, into the Fraser, Thompson, Nicola, Similkameen and Okanagan districts.

Tribe or Nation.—It is probable that the Indians of this agency belong to branches of the Salish nation. They are designated as Chinook Indians, and speak natively three distinct dialects.

ADAMS LAKE OR HALTKAM BAND.

Reserves.—The reserves of this band are located near the foot of Little Shuswap and Adams lake. They have an area of 7,188 acres, comprising agricultural, grazing and timber lands.

Population.—The population is 192.

Health and Sanitation.—There has been no epidemic in this band. Deaths have been from ordinary causes, and the general health as been much as usual. They are out of the way of much medical attention and no doubt suffer somewhat in consequence. They have all been vaccinated, a number recently; they keep their houses in fairly good condition.

Occupations.—These Indians, with water for irrigation, do considerable general farming, for which their tillable land is well adapted. They raise horses and cattle, fish and hunt in a small way, and work as labourers.

Buildings.—They have log dwellings, which are comfortable, but not imposing.

Stock.—They have good horses, some cattle and other stock.

Farm Implements.—They are well supplied with implements.

Education.—They have no schools; some have attended the Kamloops industrial school, and a number can read and write shorthand Chinook.

Characteristics and Progress.—They are industrious and have made good progress in farming.

Temperance and Morality.—They are fairly temperate and highly moral.

ASHCROFT OR STLAHL BAND.

Reserves.—The reserves of this band, three in number, are situated on a plateau on the right bank of the Thompson river opposite the town of Ashcroft, and at McLean's lake. They contain an aggregate acreage of 5,234 acres, comprising agricultural, grazing and timber lands.

Population.—The population is 45.

Health and Sanitation.—There has been no epidemic among these Indians, and sanitation is good. They have been vaccinated.

Occupations.—They carry on a mixed system of farming and stock-raising. They are short of water for irrigation; in consequence farming operations are curtailed. They fish and hunt to some extent, and work as labourers, cowboys and freighters.

Buildings.—The majority of their houses are built of logs and show the ravages of time; a few are modern and of superior quality.

Stock.—They have good horses and cattle; the former they utilize in farming, freighting, packing and when employed as cowboys.

Farm Implements.—They have a fair supply of such.

Education.—They have no schools. One or two of the children have attended Lytton industrial school.

Characteristics and Progress.—They are industrious and make a fair living.

Temperance and Morality.—They are fairly temperate and moral.

BONAPARTE OR TLUHTAUS BAND.

Reserves.—The reserves of this band, numbering five, are located on the Thompson and Bonaparte rivers, on Hat creek and Loon lake.

Population.—The population is 150.

Health and Sanitation.—No epidemic has visited these Indians. Their habits are migratory in the summer season. Most of them have been vaccinated.

Occupations.—They farm a little on Hat creek and Bonaparte, hunt and fish to some extent, and maintain themselves chiefly by labouring and as cowboys, in which latter capacity they utilize their horses.

Buildings.—They have some fair log buildings, but a number have stood for many years. Conspicuously stands a fine church.

Stock.—They have a good number of horses, mostly of a light class suitable for saddle, and some cattle.

Farm Implements.—They have sufficient for their requirements.

Education.—They have no school, but some have been educated at Kamloops industrial school.

Characteristics and Progress.—They are good workers while employed by whites, and give satisfaction to employers. They continue to make some improvements.

Temperance and Morality.—They have improved in habits of temperance, and they are otherwise fairly moral.

BOOTHROYD (SUUK, KAMOOS, NKATSAM AND CHINOOK) BAND.

Reserves.—The reserves of this band, numbering ten, are located mostly on the left bank of the Fraser river. They have an area of 1,600 acres. Most of the land is timbered and rocky, but some, when cleared, makes good farming land.

Population.—The population is 156.

Health and Sanitation.—There has been no epidemic. They have been vaccinated, and their houses are fairly clean.

Occupations.—They raise hay, vegetables and fruit. They hunt and trap, mine, and work as labourers on the railway.

Buildings.—They have a fair class of log buildings.

Stock.—They have saddle and pack horses, and they have a number of good cattle.

Farm Implements.—They have sufficient for their needs.

Education.—They have no means of education.

Characteristics and Progress.—They are industrious and excellent workers. Some of them are well-to-do.

Temperance and Morality.—They are very temperate and moral.

BOSTON BAR BAND.

Reserves.—The reserves of this band number seven, and are located around Boston Bar, North Bend and Scaucy. They contain 628 acres, mostly rocky land, with small patches which are tillable.

Population.—The population of this band is 146.

Health and Sanitation. —There has been no epidemic. They have been vaccinated, and their houses are fairly clean, particularly about North Bend. They get little medical attention.

Occupations.—They raise hay, fruit and vegetables. They live chiefly by fishing, hunting, mining and working on the railway, where a number of them get steady employment.

Buildings.—At North Bend the buildings are good, but elsewhere they are not so good.

Stock.—They have a number of saddle and pack horses, but few cattle. They winter their stock chiefly at Nicola.

Farm Implements.—They have sufficient.

Education.—They have no means of education except that provided at the Kamloops industrial school, where some have attended.

Characteristics and Progress.—They are good workers, but do not accumulate much wealth.

Temperance and Morality.—They are fairly temperate and moral.

COOK'S FERRY BAND.

Reserves.—The reserves of this band, numbering fifteen, are located on both banks of the Thompson river, around Cook's Ferry and Spatsum and in the Tuile and Highland valleys. They contain 9,110 acres of bench-lands along the river, meadow-lands in the Highland valley, and some sparsely timbered lands.

Population.—The population of this band is 185.

Health and Sanitation.—No epidemic has visited them, sanitation is excellent, and they have been vaccinated.

Occupations.—They carry on mixed farming and stock-raising, fish and hunt a little, and work as labourers and cowboys.

Buildings.—Their older buildings are mostly of logs. Within the year four neat and comfortable frame houses were built at Spence's Bridge out of material supplied by the government, to replace those carried away by the disastrous land-slide of over a year ago.

Stock.—They have good horses and cattle, and some pigs and sheep.

Farm Implements.—They are well supplied with implements.

Education.—They have no means of education except that supplied at the Lytton industrial school.

Characteristics and Progress.—They are industrious, but around Cook's Ferry, where the supply of water for irrigation is limited, they do not accomplish much. Those living at Pemynoos make better progress. They are peaceable and law-abiding.

Temperance and Morality.—They are temperate and moral.

DEADMAN'S CREEK OR STICHISTAN BAND.

Reserve.—The reserve of this band is located on Deadman's creek. It has an area of 20,134 acres, comprising farming, grazing and timber lands.

Population.—The population of the band is 120.

Health and Sanitation.—No epidemic has appeared. Their houses are not well ventilated, but in other respects sanitation is good.

Occupations.—They farm on a small scale, raise stock, chiefly horses; fish, hunt and work as labourers. They engage as cowboys to a great extent, in which employment they use their horses. This occupation is declining in that locality.

Buildings.—They have log houses, mostly mud-roofed; they are warm in winter, but not well ventilated.

Stock.—They have a number of serviceable horses, mostly for saddle purposes, and some cattle.

Farm Implements.—They are fairly well supplied.

Education.—They have no school, but several have attended the Kamloops industrial school.

Characteristics and Progress.—They are fairly industrious, and are noted as cowboys. They have made excellent progress in fencing and improving their reserve in the past year.

Temperance and Morality.—Some of them are addicted to drink, and opportunities for procuring intoxicants are frequent. They are moral in other respects.

KAMLOOPS BAND.

Reserves.—The reserves of this band, five in number, are situated at the confluence of the North and South Thompson rivers, opposite the city of Kamloops, and on Campbell and Hefly creeks. They contain an area of 33,379 acres of good agricultural, grazing, timber and meadow lands.

Population.—The population is 241.

Health and Sanitation.—The general health has been good. No epidemic has prevailed, they have been vaccinated, and they are fairly clean about their village, houses and persons.

Occupations.—They grow considerable quantities of hay and vegetables, and they find a ready market for the surplus. They raise stock, largely horses, for which they have had a good sale; they fish and hunt at intervals in season, and work as labourers and cowboys.

Buildings.—Their older buildings are in rather poor condition. The newer ones are much improved, better lighted and ventilated.

Stock.—They have large bands of horses, and considerable numbers of cattle. They find a good market for both.

Farm Implements.—They are well supplied with such implements as they require most, wagons, buggies, mowing-machines, horse-rakes, &c.

Education.—Many children attend the Kamloops industrial school.

Characteristics and Progress.—They are industrious, and they make a good living.

Temperance and Morality.—Situated as they are, the opportunities of procuring intoxicants are great, and a number have acquired a fondness for drink. Offenders against the law are severely dealt with when caught, but many escape the consequences owing to the difficulty of securing evidence. I do not think that intemperance is on the increase. In other respects they are moral.

KANAKA BAR BAND.

Reserves.—The reserves of this band, four in number, are located on both sides of the Fraser, 10 miles below Lytton. Their area is 500 acres.

Population.—The population is 54.

Health and Sanitation.—No epidemic has appeared. Their houses are unsanitary, but other conditions are good.

Occupations.—They produce little on their land, the tillable area being small. Their chief industries are fishing and mining.

Buildings.—Their buildings are below the average.

Stock.—They have a few saddle and pack horses, and some cattle.

Farm Implements.—They have sufficient.

Education.—Some can attend the Lytton industrial school.

Characteristics and Progress.—They are hard-working, but do not lay up much. They are good Indians.

Temperance and Morality.—They are temperate and moral.

LYTTON BAND.

Reserves.—The reserves, twenty-seven in number, of this band, which is composed of several small bands, lie along both sides of the Fraser river from Lytton to Nesikeep, 25 miles above. They contain an area of 10,292 acres, composed of table-land and mountain slopes, where fruit and vegetables grow well.

Population.—The population is 467.

Health and Sanitation.—There has been no epidemic; they have been vaccinated, and sanitation is good.

Occupations.—They farm in a general way, raise stock, fish, hunt, mine, and work as labourers in different ways.

Buildings.—They have a fair class of buildings.

Stock.—They raise good horses and cattle.

Farm Implements.—They are well supplied.

Education.—They have a day school in Lytton, and an industrial school two miles distant.

Characteristics and Progress.—They are industrious, and are doing well in agriculture and fruit-growing.

Temperance and Morality.—They are temperate and moral.

NICOMEN BAND.

Reserves.—The reserves of this band five in number, are situated along the banks of the Thompson river, between Lytton and Cook's Ferry. They have an area of 2,976 acres, consisting of poor bench and mountain lands.

Population.—The population is 49.

Health and Sanitation.—No epidemic has appeared, and sanitation is good.

Occupations.—They farm and raise stock, fish hunt, placer-mine and work as labourers.

Buildings.—Their log buildings are good.

Stock.—They raise some small horses, and some good cattle.

Education.—They have no school, but can attend Lytton industrial.

Characteristics.—They appear industrious, but advance slowly.

Temperance and Morality.—They are temperate and moral.

NICOLA (LOWER) BAND.

Reserves.—The reserves of this band, thirteen in number, are located along the Nicola river from near its mouth to Nicola lake. Hamilton creek reserve is also included. The area is 3,191 acres, containing good farming and grazing lands.

Population.—The population is 360.

Health and Sanitation.—No epidemic has appeared, and general health has been good; they have been vaccinated, and sanitation is good.

Occupations.—They farm largely, raise stock extensively, fish and hunt moderately, and work industriously as labourers and cowboys.

Buildings.—They have a good class of buildings.

Stock.—They have good herds of cattle and horses; they keep good stallions and mares for breeding purposes. It is not unusual for white settlers to breed to some of their stallions.

Farm Implements.—They are well supplied with all needful implements.

Characteristics and Progress. They are very industrious, those on the Mameet reserve being particularly advanced in cultivating their land. They are law-abiding.

Temperance and Morality.—They are only fairly temperate and up to the average in morals.

NICOLA (UPPER) OR SPAHAMIN BAND.

Reserves.—The reserves of this band, eight in number, are located near the head of Nicola lake and around Douglas lake. They have an area of 50,888 acres, comprising good farming and grazing lands.

Population.—The population is 192.

Health and Sanitation.—No epidemic has appeared and sanitation is good.

Occupations.—They carry on mixed farming and extensive stock-raising. They hunt and fish to some extent, and work as labourers, cowboys and freighters.

Buildings.—They have a good class of buildings, mostly of logs.

Stock.—They have large herds of cattle and horses of the best quality.

Farm Implements.—They have sufficient implements.

Education.—They have no schools. Some have attended the industrial school at Kamloops.

Characteristics and Progress.—They are industrious and many are well-to-do.

Temperance and Morality.—A few are given to drinking; most of them are very temperate, and they are generally moral.

NESKAINLITH OR HALAUT BAND.

Reserves.—The reserves of this band, three in number, are located on the Thompson river near Shuswap lake. They have an area of 6,996 acres, composed of good farming and grazing lands.

Population.—The papulation is 161.

Health and Sanitation.—No epidemic has visited them; general health has been good and sanitation is good.

Occupations.—They farm extensively and raise stock and fish. They hunt to some extent, and work as labourers.

Buildings.—They have a fair class of buildings.

Farm Implements.—They are well supplied.

Characteristics and Progress.—They are law-abiding and industrious, and are making good progress in farming.

Temperance and Morality.—They are fairly temperate and moral.

NORTH THOMPSON OR CHUCHUQUALK BAND.

Reserves.—The reserves of this band are situated on the North Thompson river, about 50 miles above Kamloops. They have an area of 3,239 acres, of good farming and timber lands.

Population.—The population is 125.

Health and Sanitation.—No epidemic has appeared. Their houses are small and poorly ventilated; otherwise sanitation is good.

Buildings.—They have a poor class of buildings.

Occupations.—They farm and raise stock to some extent, hunt more than other Indians, do some fishing, and work as cowboys, packers and general labourers.

Stock.—They have some good horses and cattle.

Farm Implements.—They have sufficient.

Education.—Some attend the Kamloops industrial school.

Characteristics and Progress.—They are good industrious people, and make fair progress in farming.

Temperance and Morality.—They are highly temperate and moral.

OKANAGAN OR NKAMAPLIX BAND.

Reserves.—The reserves of this band, ten in number, are located around the head and both sides of Okanagan lake. They have an area of 29,790 acres of good farming, grazing and timber lands.

Population.—The population is 227.

Health and Sanitation.—No epidemic has appeared, and sanitation is good.

Occupations.—They farm extensively, raise stock, fish, hunt and work as farm-hands, cowboys and hop-pickers.

Buildings.—They have a fair class of buildings.

Stock.—They have a number of horses for all-round work, and some good cattle.

Farm Implements.—They are well supplied with all kinds of farm implements, including self-binders and a steam thresher.

Education.—Some have attended Kamloops industrial school.

Characteristics and Progress.—They are industrious, and farm well. They are growing more hay and less grain than formerly. A few are reckless, and hard to control.

Temperance and Morality.—Some are addicted to the use of intoxicants, but the law in such cases is well enforced. They are fairly moral in other respects.

OREGON JACK CREEK BAND.

Reserves.—The reserves of this band are located on the right bank of Thompson river below Ashcroft, and on Oregon Jack creek. They contain 2,380·70 acres, some farming, but mostly grazing land.

Population.—The population is 18.

Health and Sanitation.—No epidemic appeared among them. Sanitation is good.

Occupations.—They grow hay and vegetables, fish, hunt and work as labourers.

Buildings.—These are of logs and are small.

Farm Implements.—They have sufficient.

Stock.—They have general purpose horses and some cattle.

Characteristics and Progress.—They are industrious, and make a fair living.

Education.—They have no school.

Temperance and Morality.—They are temperate and moral.

OSOYOOS BAND (NKAMIP).

Reserves.—The two reserves of this band are located at the head of Osoyoos lake and at the foot of Dog lake. The area is 32,168 acres; good farming, fruit and grazing lands.

Population.—The population of this band is 61.

Health and Sanitation.—No epidemic has appeared; houses are well kept, and other sanitary conditions are good.

Occupations.—They grow cereals, vegetables and fruit; they fish and hunt, and work as labourers.

Buildings.—The buildings erected in recent years show a marked improvement over those of earlier build.

Stock.—They have a number of fair horses, and some good cattle.

Farm Implements.—They have sufficient.

Education.—They have no school.

Characteristics and Progress.—They are fairly industrious. They sell a good deal of fruit, apples, peaches, cherries, and small fruits, for which they have a ready market.

Temperance and Morality.—They are temperate and moral.

PENTICTON BAND.

Reserves.—The reserves, three in number, of this band are located at the foot of Okanagan lake, No. 3 being 12 miles from No. 1. They contain 48,694 acres of good meadow, farming and grazing lands.

Population.—The population of this band is 157.

Health and Sanitation.—The houses of these Indians are clean and well kept. No epidemic has visited them.

Occupations.—They farm, raise stock and fruit, fish, hunt, and work as cowboys.

Buildings.—They have a comfortable class of buildings.

Stock.—They have good horses and cattle.

Farm Implements.—They have sufficient of these.

Education.—They have no means of education.

Characteristics and Progress.—They are industrious Indians and many are making good progress.

Temperance and Morality.—They are fairly temperate and moral.

SHUSWAP (LITTLE LAKE) OR KUANT BAND.

Reserves.—The reserves of this band, five in number, are located at the head of little Shuswap lake and on Salmon arm. Their area is 7,840 acres, consisting of good timber and grazing lands.

Population.—The population of this band is 95.

Health and Sanitation.—The general health has been good, there has been no epidemic. Sanitation is good.

Occupations.—They farm a little, raise stock, fish, hunt, and work as labourers.

Buildings.—Their buildings are of a good class.

Stock.—They have some horses and cattle.

Farm Implements.—They are well supplied with implements.

Education.—They have no schools among them.

Characteristics and Progress.—They are industrious and law-abiding. They make good fields by clearing off the timber.

Temperance and Morality.—They are temperate and moral.

SIMILKMEEN, LOWER AND UPPER BANDS (CHUCHUWAYNA, ASHNOLA AND SHENNOSQUANKIN).

Reserves.—The reserves, seventeen in number, of this band are located along the Similkameen river, from the boundary line to Princton. The area of the Lower reserves is 19,472 acres, that of the Upper is 6,438 acres, containing good bottom, bench and grazing lands.

Population.—The population of this band is, Lower, 134, Upper, 44.

Health and Sanitation.—No epidemic has visited them, and the general health has been good. They have been vaccinated.

Occupations.—They farm, raise stock extensively, fish, hunt, and work as labourers.

Buildings.—They have a fair class of log buildings.

Stock.—They have a number of horses and cattle.

Farm Implements.—They have all necessary implements.

Characteristics and Progress.—They are industrious and law-abiding, and make good progress in farming.

Temperance and Morality.—They are temperate and moral.

SISKA BAND.

Reserves.—The reserves of this band, numbering seven, are located on the Fraser river, a short distance below Lytton.

Population.—The population of this band is 29.

Health and Sanitation.—No epidemic has appeared among them. Their houses are small and poorly ventilated.

Occupations.—They produce little from their land. They hunt and fish to a considerable extent.

Buildings.—They have a poor class of buildings.

Stock.—They have only a few saddle horses.

Farm Implements.—They have use for few.

Characteristics and Progress.—They barely earn their living. They are law-abiding.

Temperance and Morality.—They are fairly temperate and moral.

SKUPPA BAND.

Reserves.—The reserves of this band are on the left bank of the Fraser between Lytton and Siska. They have an area of 268 acres, which produces little.

Population.—The population of this band is 17. Other statistics are included in the Lytton band, with which it is identified.

SPALLUMCHEEN BAND.

Reserves.—The reserves of this band, numbering three, are located on the Spallumcheen and Salmon rivers. The area is 679 acres, comprising agricultural and timber lands, with some good pasture lands on the Salmon river.

Population.—The population of this band is 161.

Health and Sanitation.—No epidemic has visited them, their houses are sanitary, and they have been vaccinated.

Occupations.—They farm extensively, fish, hunt, and work as labourers.

Buildings.—They have a good class of buildings.

Farm Implements.—They are well supplied with implements.

Education.—They have no schools.

Characteristics and Progress.—They are very industrious, and many are well-to-do. They are peaceable and law-abiding.

Temperance and Morality.—They are exceptionally temperate and moral.

SPUZZUM BAND.

Reserves.—The reserves, six in number, of this band, are on the Fraser river some distance above Yale. They have an area of 456 acres, containing some tillable land.

Population.—The population of this band is 158.

Health and Sanitation.—No epidemic has appeared, their health has been good and they have been vaccinated.

Occupations.—They grow a little hay, fruit and vegetables. They fish and hunt.

Buildings.—They have a fair class of buildings.

Stock.—They have some pack and saddle horses.

Farm Implements.—They have sufficient for their needs.

Education.—They have no schools. Some attend at Spuzzum station and at All Hallows, Yale.

Characteristics and Progress.—They are industrious; but, as their means of living are few, they make little progress.

Temperance and Morality.—They are temperate and moral.

COLDWATER BAND.

Reserves.—The reserves of this band, numbering three, are located on the Coldwater river, in the Nicola valley. They have an area of 6,276 acres, mostly farming and grazing lands.

Population.—The population of this band is 108.

Health and Sanitation.—There has been no epidemic among them and their general health has been good. Sanitation is good.

Occupations.—They farm, raise stock, fish and hunt, freight and work as labourers.

Buildings.—They have a very good class of buildings.

Stock.—They have a number of good horses and cattle.

Farm Implements.—They have sufficient of these.

Education.—They have no schools, but some have attended the Kamloops industrial school.

Characteristics and Progress.—They are industrious, steady and law-abiding. They make good progress in farming.

Temperance and Morality.—They are exceptionally temperate and moral.

GENERAL REMARKS.

The Indians of this agency, taken as a whole, are industrious, and this applies probably more to the women than to the men, and they have made great advancement in the direction of civilization within the short period of thirty or forty years. They dress well on occasion, and respectably at any time; they have as good horses and cattle, carriages and turn-outs, as the average of white settlers, and they are in evidence at agricultural exhibitions and sports of various kinds.

The industrial schools at Kamloops and Lytton continue successfully the work of education and instruction, and a day school has been in operation at Lytton since October of last year. It has been well attended.

The Indian hospital at Lytton, under the care of Rev. E. W. W. Pugh, has given relief to many suffering Indians.

I have, &c.,

A. IRWIN,

Indian Agent.

PROVINCE OF BRITISH COLUMBIA,
KOOTENAY AGENCY,
STEELE, April 10, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location of Agency.—The agency is situated in the southeast portion of the province, and is bounded by the Rocky mountains on the north and east, by the United States on the south, and the Okanagan agency on the west.

ST. MARY'S BAND NO. 1.

Tribe or Nation.—The Indians of this band belong to the Kootenay tribe.

Reserve.—The reserve is situated on the Kootenay river at the mouth of the St. Mary's river, and has an area of 17,425 acres, bottom and bench land, part of which is covered with good timber. The Isidore reserve, south of Steele, consists of 680 acres, mostly bottom-land. The Miyuke reserve, on the line of the Crow's Nest railway, has an area of 160 acres of swamp and arable land. The Bummer Flat hay reserve, north of Steele, on the left bank of the Kootenay river, contains 190 acres. The Kootenay industrial school reserve, on the St. Mary's river, contains 33 acres, and the agency office reserve at Steele, 11½ acres.

Population.—The population of the band is 218.

Health and Sanitation.—There was an epidemic of measles throughout the different bands in the agency in the spring, and during the winter a severe attack of grippe, followed by pneumonia, which in many cases proved fatal, especially amongst the aged and the young children.

The conditions at the village of St. Eugene continue to improve, and better dwellings are taking the place of unsanitary shacks that were first erected. Vaccination was carefully attended to.

Occupations.—The principal occupations of this band are stock-raising and farming. The more intelligent and those who have been trained at the industrial school find work in the lumber camps, some are employed by the ranchers in the vicinity, and a few follow trapping, hunting and fishing.

Buildings.—They have a fairly good class of dwellings.

Stock.—Of late years they improved their stock greatly, and they now own a fairly good band of horses and cattle.

Farm Implements.—These consist of wagons, ploughs, harrows, mowers, rakes, spades and shovels, which are carefully housed in the winter.

Education.—The Kootenay industrial school is near the reserve, and is under the supervision of the Rev. James Wagner, O.M.I., as principal, with the Sisters of Charity as his staff. The work done at the institution deserves the greatest praise, and those in charge perform their several duties with fidelity and zeal. The parents of the pupils visit from time to time, and seem to appreciate and understand the great work that is being done for the children.

Characteristics and Progress.—The Indians of the band are industrious, steady and law-abiding. They are seldom charged with any serious crime, and they are making fairly good progress in farming and are improving their dwellings.

Temperance and Morality.—With a very few exceptions, they are not given to the use of intoxicants, and are a moral and a model band of Indians.

TOBACCO PLAINS BAND, NO. 2.

Tribe or Nation.—The Indians of this band are Kootenays.

Reserve.—The reserve is near the international boundary and adjoins the State of Montana. It contains 10,560 acres of very good grazing and prairie land, a good deal of which can be made to grow excellent root crops and grain, and is well adapted for fruit-culture.

Population.—The population of the band is 57.

Health and Sanitation.—There was a good deal of sickness among the Indians of this reserve during the year, and a number of deaths occurred from pneumonia and measles. The sanitary condition of the little Indian village is fairly good, as it is situated on a gravelly bench, and the dwellings are not close together.

Occupations.—They follow farming, stock-raising, trapping, hunting and fishing. A few find work in the lumber camps and around the saw-mills, when in operation.

Buildings.—Their houses are built of hewn logs, and they are in most cases clean and comfortable. They also have a number of sheds for their cattle and horses, and for their farm implements.

Stock.—The Indians of the band have good cattle and horses, which they provide well for during the winter, and which they improve from time to time by purchase of well-bred stallions and bulls.

Farm Implements.—These consist of wagons, sleighs, ploughs, harrows, mowers and rakes.

Characteristics and Progress.—These Indians continue to make satisfactory progress, and the work done on the different farms is praiseworthy. They have their farms inclosed with good fences, which are carefully looked after.

Temperance and Morality.—They are a temperate and moral-living band, and with a few exceptions are not given to the use of intoxicants.

LOWER COLUMBIA LAKE BAND, NO. 3.

Tribe or nation.—These Indians are Kootenays.

Reserve.—The reserve is situated in the Windermere district between two beautiful lakes called Fairmont and Windermere, on the head-waters of the Columbia river, on the east side, and has an area of 8,456 acres. The land is of a light sand nature, with some swamp-land near Lake Windermere, upon which is cut very good hay. All the farms on the reserve have irrigation ditches, which ensure excellent crops.

Population.—The population of the band is 76.

Health and Sanitation.—There was an epidemic of measles and grippe amongst the Indians in the spring and during the winter, which, in a number of cases, proved fatal. The sanitary conditions are good, as their houses are comfortable, and are clean and neatly kept. Usually these Indians live in tents during the summer, which are frequently moved.

Occupations.—They depend on farming and stock-raising as a means of living. A few still go hunting and trapping. The young men find work in the neighbourhood, on the different farms.

Buildings.—Most of the houses are of hewn logs, with one or two frame dwellings, which are comfortable, well lighted and ventilated.

Stock.—These Indins own a good band of cattle and horses, which they continue to improve steadily by the purchase of a better class of bulls and stallions, and they find no difficulty in disposing of the increase from time to time.

Farm Implements.—The farm implements are modern, and consist of wagons, sleighs, ploughs, harrows, mowers and rakes.

Characteristics and Progress.—They are intelligent, industrious and progressive, and continue to improve and enlarge their holdings.

Temperance and Morality.—These Indians are very law-abiding, temperate and moral, and give the authorities very little trouble.

LOWER KOOTENAY BAND, NO. 4.

Tribe or Nation.—The Indians belonging to this band are Kootenays.

Reserve.—The reserve is in West Kootenay, on the Kootenay river, and is 3 miles north of the international boundary in Idaho, and about 2 miles south from the town of Creston, which has become famous as a fruit-growing section. It has an area of 1,831½ acres, most of which is subject to overflow during the high water, which occurs nearly every year, and only a small portion on the bench is capable of cultivation.

Population.—The population of the band is 162.

Health and Sanitation.—The Indians on the reserve suffered, like all others throughout the agency, from grippe, pneumonia and measles, which proved fatal to a number. These Indians, since they built on the bench where their village and church are situated, have had better health, as they keep their dwellings fairly clean and the refuse around their premises is also attended to and removed.

Occupations.—They follow cattle-raising as their chief industry. They hunt, trap and fish, clear land, work in the lumber camps, and during the fruit season their services are in great demand as helpers in picking and gathering in the fruit for shipment, and they earn good wages.

Buildings.—Their dwellings are mostly of logs, and are an improvement on those they formerly occupied. In the summer they live mostly in tents, which are moved frequently, hence they seldom become unsanitary.

Stock.—Their cattle are fairly good. They own a nice little band, which they carefully look after in the winter. Their horses are small and of no great value, and very little has been done to improve them.

Farm Implements.—These consist of mowers, rakes, ploughs, harrows, a few wagons and sleighs.

Characteristics and Progress.—These Indians are progressing and the majority of them are industrious and anxious to work.

Temperance and Morality.—They are temperate, law-abiding and moral in their habits.

SHUSWAP OR KINBASKET'S BAND, NO. 5.

Tribe or Nation.—These Indians came originally from the Okanagan country, and settled at Lake Windermere many years ago, and are Shuswaps.

Reserve.—The reserve is situated on the Columbia river near Toby creek, and has an area of 2,759 acres. The land is excellent for all kinds of crops, as it is level, and easily cleared and cultivated, and is well adapted for irrigation. It has just sufficient timber for fuel and fencing.

Population.—The population of the band is 57.

Health and Sanitation.—These Indians suffered, like others, from measles, pneumonia and grippe, and a number of deaths was the result.

The sanitary conditions of their dwellings are good, as they are well lighted and ventilated, and are kept very clean, as many of the younger Indians have been trained at the Kootenay industrial school, and understand housekeeping.

Occupations.—They follow farming, stock-raising and freighting as their principal industries. Only a few hunt and trap.

Buildings.—Their dwellings are very comfortable, and they have good barns and sheds for their cattle and farm implements.

Stock.—The cattle are well looked after and are carefully provided with plenty of hay and straw for winter feeding.

They have a good serviceable class of horses, which they are improving by purchase of well-bred stallions.

Farm Implements.—These are up-to-date, and consist of ploughs, harrows, wagons, sleighs, mowers, rakes and a threshing-machine, all of which are carefully looked after and kept in good repair.

Characteristics and Progress.—They take the lead as the most progressive and industrious Indians in the agency. Their farms show careful cultivation, and their fences are kept in good repair.

Temperance and Morality.—With one or two exceptions, the members of this band are moral and temperate.

ARROW LAKE BAND, NO. 6.

Tribe or Nation.—These Indians are Shuswaps and came from the Okanagan country several years ago, and have since then lived on the Columbia river and Arrow lake.

Reserve.—The reserve is on the west side of Arrow lake in the West Kootenay district, and contains 255 acres. The soil is light and sandy and suitable for growing root crops and fruit.

Population.—The population of the band is 25.

Health and Sanitation.—There has been no serious sickness among these Indians for the past season. They keep their dwellings clean and neat.

Occupations.—They are employed by the ranchers clearing land, picking fruit and berries, and they do their work in a very creditable and satisfactory manner. They also hunt and trap.

The women are excellent with the needle, and make moccasins and gloves, which meet with a ready sale.

Buildings.—The dwellings are of dressed lumber, and are kept clean and neat.

Stock.—They have no stock of any kind.

Farm Implements.—These consist of hoes, rakes and shovels.

Characteristics and Progress.—They are trustworthy and industrious, and their services are in demand as helpers on the ranches, and they faithfully carry out any contract they may make as to work.

Their little gardens are being improved by clearing, grubbing and fencing.

Temperance and Morality.—They are fairly temperate, and their morals are excellent.

GENERAL REMARKS.

I feel it my duty to add that the Indians of the agency are steadily advancing and are industrious, and many are excellent farmers, and I hope within a few years to see the majority self-supporting.

The ex-pupils of the industrial school are of the greatest assistance to their people, and the Indians appreciate the intelligent way in which they do their work, and the knowledge acquired at the institution enables them to earn good wages.

Doctors Watt and Elliott, the medical attendants to the agency during the past year, discharged their very onerous duties faithfully and well.

I have, &c.,

R. L. T. GALBRAITH,

Indian Agent.

British Columbia,
Kwawkewlth Agency,
Alert Bay, March 31, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report on the affairs of this agency, for the year ending March 31, 1908.

Location of Agency.—This agency extends from Cape Mudge on the south, to and including Smith's inlet on the north, and includes all the islands between those points; the mainland, from the entrance of Bute inlet to Smith's inlet; the east side of Vancouver island from Kuhushan point to Cape Scott, the extreme northwest point of Vancouver island; the west coast of Vancouver island as far south as Klaskino inlet; and from Klaskino inlet across Vancouver island in a southwesterly direction to Kuhushan point.

The Indians in this agency belong to two nations, namely, Kwawkewlth and Lachwiltach, each being divided into several tribes, of varying numbers. The language, however, with unimportant differences, is one and the same. There are at present only fourteen different or distinct bands, many of the smaller bands having united with others. As my report for the previous year was a very extended one, I need go very little into details, and at the close, treat of the agency as a whole.

KWASHELA BAND.

Reserves.—Smith's Inlet comprises two reserves with an aggregate of 716 acres, most of which is unfit for agricultural purposes.

Population.—The population of this band is 47.

Health and Sanitation.—The health of these Indians was fair; measles being the only epidemic during the past year.

Occupations.—These Indians engage chiefly in fishing and hunting.

Buildings.—All the buildings are of the usual type common to the coast Indians.

Stock.—No domestic stock is kept by this band excepting a few fowls.

Farm Implements.—They have no farm implements.

Education.—They take no interest in education.

Characteristics and Progress.—These Indians are fairly industrious and law-abiding, but are making no progress.

Temperance and Morality.—They are so isolated that the temptations to drink are not so bad as in many other places, and they are fairly moral according to their code of ethics.

NAKWAKTO BAND.

Reserves.—There are in all 17 reserves in the vicinity of Seymour Inlet, with an area of 684 acres.

Population.—This band numbers 98.

Health.—The health of these Indians has been fair; there was an epidemic of measles during the past season.

Occupations.—Fishing and hunting are the occupations of these Indians.

Buildings.—In the main village at Blunden Harbour there are some very fair houses. Those at their fishing stations are only poor shacks.

Stock and Implements.—They have no stock or implements.

Education.—They have no education and apparently have no desire for any.

Characteristics and Progress.—With the exception of the work necessary in hunting and fishing, they are lazy, and inclined to be indolent, and there has been no progress made during the past year.

Temperance and Morality.—Being isolated, it is not very easy for them to get liquor, and as a rule they do not try to get it. In regard to morality, they are about the same as the others.

NUWITTI BAND.

Reserve.—This band has a reserve area of 8,606 acres, most of which is on Hope island and very little of it of much use.

Population.—The population of this band is 70.

Health.—A few of the children were affected with measles, and there were two severe attacks of erysipelas, otherwise the general health has been very good.

Occupations.—These Indians fish and hunt.

Stock.—They have nothing but a few fowls.

Characteristics and Progress.—They are fairly industrious and law-abiding, but not at all progressive.

Temperance and Morality.—As a rule they are a very temperate lot and rather above the average in regard to morality.

KWAWKEWLTH BAND.

Reserves.—There are in all about 260 acres belonging to this band, which has its headquarters at Fort Rupert. Nearly all this land is suitable for agriculture or grazing, but very little of it has ever been cultivated.

Population.—The population of this band is about 100.

Health and Sanitation.—Measles was very prevalent during the past year, but no deaths ensued. There were 5 deaths during the year, 2 from consumption and the others from what might be called natural causes.

Occupations.—Many of the young men made a considerable sum of money during the past year at hand-logging. All, or nearly all, went to the salmon-fishing at Rivers Inlet.

Stock and Implements.—These Indians have no stock and no farm implements.

Education.—They have no school at their village and they take no interest in educational matters.

Characteristics and Progress.—Formerly this was one of the most progressive tribes in the agency, but at present progress seems to be at a stand-still. There are many of their young men who possess considerable capability, but they lack initiative.

Temperance and Morality.—Many of this band are addicted to drink. While at home it is not very easy to obtain, and as a consequence the young men go off to town when they get a few dollars ahead, spend it in riotous living, and then return penniless.

KOSKEMO, KWATSINO AND KLASKINO BANDS.

Reserves.—These three bands together have 1,039·5 acres of land, situated on Quatsino sound, Winter harbour and Klaskino inlet. Most of this is mountain-land, densely wooded, while there are odd patches suitable for agricultural purposes.

Population.—The three bands together number only 87.

Health and Sanitation.—There has been no epidemic of any kind amongst this people, and the two deaths which occurred were from general breaking up with old age.

Occupations.—The chief occupations of these Indians are fishing and hunting.

Buildings.—These are of the usual type, large and airy, and well ventilated.

Stock.—They have a few fowls.

Education.—These Indians have no education.

Characteristics and Progress.—Owing to the great want of young people in this locality, the outlook does not seem very bright for them. They are not progressive in any sense of the word and cling to all their old customs.

Temperance and Morality.—These Indians are not given to the use of intoxicants; and their morality is fairly good.

NIMKISH BAND.

Reserves.—This band has a reserve area of about 445 acres situated on Nimkish river on Vancouver island and a small reserve, where the village is, at Alert bay.

Population.—The population of this band is 141.

Health and Sanitation.—Measles has been been very prevalent and nearly all the children suffered from it. There were a number of deaths from consumption. The village is kept fairly clean.

Occupations.—This band is very fortunate in regard to occupations. There is a saw-mill at Alert Bay which employs a number of men. As all steamboats going north or south call here, it makes a kind of distributing point. During the past year a great deal of money was made by taking timber cruisers and surveyors to various places. Many of the young men also worked at hand-logging. Then the fishing season gave all employment that wanted it.

Buildings.—There are a few modern houses, which are comfortably furnished and kept in good repair; but the majority are of the usual type.

Stock and Implements.—There are a very few head of cattle here, but they give very satisfactory results. No farming, however, is done.

Education.—This band is very much the best off in the agency with respect to educational matters, as the industrial school is located here, and there is also a day school. Very little interest is taken in the schools, however; but those who attend seem to do very well.

Characteristics and Progress.—This band is fairly industrious and intelligent, but do not progress as one would expect with the advantages they have. As a rule they are law-abiding.

Temperance and Morality.—Considering the fact that they are more exposed to temptation than in most of the places in the agency, one cannot complain very much about the temperance or morality of the place.

TSAWATAINEUX BAND.

Reserves.—This band has a reserve area of 852·65 acres, mostly at the head of Kingcome inlet and Wakeman sound, a great portion of which is very suitable for agricultural purposes.

Population.—This band consists really of four bands, namely, Tsawataineuk, Ahwharmish, Quaw-ano, and Quickswotaineuk, and numbers all told 221 souls.

Health and Sanitation.—The members of this band are noted as being extremely dirty, and yet they seem to be fairly healthy. They were almost the last to have the measles.

Occupations.—The principal occupations are fishing, hunting and hand-logging. They have a splendid reserve at Kingcome Inlet from an agricultural standpoint, but it is not at all used for such purposes.

Buildings.—They have two villages, one for summer and one for winter, but the houses are very poor.

Stock and Implements.—Of these they have none.

Education.—This band has two schools, one at each village, and Mr. Pearson, C.M.S. missionary, who is their teacher, follows them from one village to the other. They do not attend very well, and seem to think it not at all necessary for the children to be educated.

Characteristics and Progress.—This band is inclined to be very indolent, though on occasion they work hard and work well. With the exception of a few, they are on the whole law-abiding, but not at all progressive.

Temperance and Morality.—In regard to temperance, one cannot find much fault; but their idea of morality is very low.

MAMALILLIKULLA BAND.

Reserves.—This band has a reserve area of 574·5 acres, situated on Village island and Tribune channel, but only a small portion of this is fit for agricultural purposes.

Population.—The population of this band is 100.

Health and Sanitation.—In these respects this band is about on a par with the rest of the agency.

Occupations.—The occupations of this band are hunting, fishing and hand-logging.

Buildings.—These are of the usual type of large shack.

Stock and Implements.—Of these this band has none.

Education.—These Indians have no school, and show no desire for one.

Characteristics and Progress.—This band is fairly industrious and law-abiding.

Temperance and Morality.—This band is about on a par with the rest of the agency.

TANAKTEUK BAND.

Reserves.—This band has four reserves, aggregating 565·7 acres, situated on the shores of Knight inlet, but a large portion of it is mountain and unfit for much.

Population.—The population of this band is 101.

Health and Sanitation.—These Indians are fairly healthy. An epidemic of measles attacked not only children but grown people. Their summer village at the head of Knight inlet is very healthy, but the winter village at Harbledown island has a poor water-supply.

Occupations.—The occupations of this band are principally hand-logging, fishing and hunting.

Buildings.—Not only are the buildings of a poor type, but they are poor samples of the type.

Stock and Implements.—These Indians have no stock and no farm implements.

Education.—There is no school in connection with this band, though a disposition is shown that, if one were supplied, the children would attend.

Characteristics and Progress.—This band is fairly industrious and law-abiding.

Temperance and Morality.—In these respects the behaviour of these Indians is fairly good.

KLAWATSIS AND MATILPI BANDS.

Reserves.—These two bands together have about 172 acres of reserves, of which about one-third might be useful for agricultural purposes.

Population.—The combined population of these two bands is 102.

Health and Sanitation.—This band is much cleaner than any other in the agency, and as a rule the people are very healthy. With the exception of measles, there has been no epidemic among them.

Occupations.—Fishing, hunting and hand-logging are the chief occupations of these Indians.

Buildings.—Their buildings, though of the usual type, are above the average in appearance.

Education.—There are no schools, and apparently no desire to have any.

Stock and Implements.—Of these this band has none.

Characteristics and Progress.—This band as a whole is very industrious, and the members are good workmen in their own lines.

Temperance and Morality.—These Indians are rather above the average in these respects.

WAWLITSUM OR SALMON RIVER BAND.

Reserves.—This band has one reserve at Salmon river, of 329 acres of first-class agricultural land.

Population.—The population of this band is 33.

Health and Sanitation.—The village is well situated and has good drainage. There has been no epidemic during the past year.

Occupations.—Fishing, hunting and hand-logging are the chief occupations of these Indians.

Buildings.—These are very poor.

Stock and Implements.—This band has one plough, the property of the department, but no stock is kept.

Education.—There is no school of any kind at Salmon river. One boy from there is at present in attendance at the Alert Bay industrial school.

Characteristics and Progress.—This band is not at all progressive.

Temperance and Morality.—With one or two exceptions this band is addicted to the use of intoxicants. Unfortunately there is a saloon of the lowest kind not very far off and always a low class of white men hanging about who are ready to obtain liquor for them. In morals they are of a low order.

WEWAIAIKUM OR CAMPBELL RIVER, AND KWIAHKAH BANDS.

Reserves.—During the past year the Cape Mudge or Wewaiaikai band gave up their claim to the reserve at Campbell river to this band, which has been settled on it for many years. They have now 675.5 acres including the reserves at Cardero channel and Loughborough inlet. The reserve at Campbell river is splendid agricultural land.

Population.—The combined population of these two bands is 80.

Health and Sanitation.—The village is very healthily situated on a sand spit, and has good natural drainage. These Indians have one difficulty and that is the difficulty in getting fresh water. However, it is to be expected that a remedy will be found for that during the coming year.

Occupations.—Fishing, hunting and logging are the chief occupations of these bands.

Buildings.—Their buildings are all frame houses, but not of a first-class order.

Stock and Farm Implements.—These Indians have no stock and no farm implements.

Education.—A few of the children get an occasional day's attendance at Cape Mudge day school, but little interest is taken in educational matters.

Characteristics and Progress.—With the exception of the law relating to intoxicants, the members of this band are fairly law-abiding, and they are fairly industrious.

Temperance and Morality.—I regret to state that this band and their vicinity is the black spot in the agency. The reserve is close to a saloon, and while I have every reason to believe that the proprietors do not connive at supplying the Indians, still there are always enough loafers to do so. It is always very difficult to obtain evid-

ence enough to get a conviction, as in many cases the culprit is hardly known to the Indians themselves and is gone before any trace of him can be secured.

WEWAIAIKAI OR CAPE MUDGE BAND.

Reserves.—This band has 1,665.5 acres of as good land as is to be found in the country, being almost all suitable for agricultural purposes.

Population.—The population of this band is 115.

Health and Sanitation.—This village is healthily situated, and the general health has been very good, there having been no epidemic excepting measles.

Occupations.—Fishing and logging are the chief occupations of these Indians.

Buildings.—Most of the buildings are the usual shacks, but there are some fair frame houses.

Stock.—This consists of one horse and one cow, neither of which as yet has been a source of profit.

Education.—There is a day school presided over by Rev. J. E. Rendle, Methodist missionary. The attendance at this school is very fair when the children are at home, but unfortunately they are travelling about a great deal.

Characteristics and Progress.—The members of this band have many advantages in the way of training and marketing, but they are very slow to take advantage of them. They are a sociable people and many of them very industrious.

Temperance and Morality.—This band is fairly temperate and moral.

REMARKS APPLICABLE TO THE WHOLE AGENCY.

The past year has been an exceptionally good one so far as the earning power of the Indians is concerned. Early in the season there was a tremendous demand for logs, and many of the people took advantage of it. Late in the year the demand suddenly fell off, and prices dropped to such an extent that most of those who were logging stopped work. Those who continued working have had the greatest difficulty in disposing of their logs. Owing to the action of the provincial government in refusing to issue any more hand-logger's licenses, and owing to its withdrawing all timber-lands from the market, the Indians who have been making money out of timber will be forced to find something else to do. They are not very ready to adapt themselves to new conditions and as a result I anticipate a great deal of hardship during the coming year, as none of them have saved anything out of their earnings. They are now preparing for the usual oula chon fishing, and I have prevailed on them to make unusual efforts to obtain a full supply of their own native foods, in order to prepare for hard times.

With the exception of a very bad epidemic of measles, the general health has been fairly good. Measles broke out in the industrial school, having been brought from Fraser river by a boy who came from there to attend school and who sickened a few days after arrival. There were 15 cases in the school, and in spite of every precaution it spread through the village, there being about 40 cases there, not counting the white children. The number of cases of tuberculosis is increasing, and several deaths occurred from it.

There is a very great apathy in the whole agency over the matter of education. There are three day schools besides the industrial school, but the attendance has not been at all satisfactory. In the case of two tribes the parents were summoned to court for not sending the children, and were released on suspended sentence. Since then the attendance has been much better. The industrial school is doing first-class work, and the moral tone of the school is so good that its influence must eventually be felt amongst the people. The Indians cling to their old customs very persistently, and to a large extent this nullifies the good done both by schools and churches.

The Indians of this agency are not at all a progressive people, and in fact in many ways are going backwards. The unusual amount of money they were able to earn has spoiled them to a large extent, as they do not know the value of it, and spend so freely that they have nothing left. Many of the young men are good workers while they are at it, but none of them seem capable of a long continued period of sustained effort. The want of incentive seems to be the great trouble.

In regard to temperance and morality, there has been on the whole a decided improvement. There were a number of convictions for supplying liquor to them, which has had a good effect. The only real plague spot in that respect is in the vicinity of Campbell River. In regard to other forms of immorality, there has been a decided improvement, as the Indians are beginning to realize the danger of their race becoming extinct if they do not amend and lead better lives.

I have, &c.,
W. M. HALLIDAY,
Indian Agent.

BRITISH COLUMBIA,
NORTHWEST COAST AGENCY,
METLAKATLA, April 30, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my first annual report respecting the affairs of this agency for the year ended March 31, 1908.

Location of Agency.—This agency is located on the northwest coast of British Columbia, extending from the head of Rivers inlet in the south, to the head of Nass river in the north, including all the islands and inlets on the coast, extending up the Skeena river to Kitselas canyon, and taking within its boundaries the Queen Charlotte and Dolphin islands.

Area.—The total area of the reservations in this agency is 88,237 acres.

Population.—The population of this agency is almost 4,000.

Reserves.—The principal reserves are Skidegate and Massett on the Queen Charlotte islands, Kitkatla on Dolphin island, Kitlacdamax, Aiyansh, Lachkalsap, and Kincolith on the Nass river, Port Simpson and Metlakatla on the Tsimpsean peninsula, Port Essington and New Town on the Skeena river, Hartley Bay on the entrance of Douglas channel, Kitimat at the head of Douglas channel, China Hat on Tolmey channel, Bella Bella on Lama passage, Bella Coola at the head of Bentick arm, Kemsquit at the head of Dean channel, Oweekayno at the head of Rivers inlet. These reserves can now be termed the headquarters of the Indian people of this extensive agency.

SKIDEGATE BAND.

Reserves.—The reserves are situated in close proximity to Skidegate inlet, Queen Charlotte islands, with an acreage of 1,613 acres, with Skidegate village situated near the mouth of the inlet. The land is generally rough and unsuitable for agriculture.

Population.—The population is 242.

Health and Sanitation.—The health of this band of Indians during the year was fairly satisfactory. An epidemic of measles visited the largest part of the agency during the autumn and winter of 1907; in several cases, when affected with tuberculosis, the patient succumbed.

Sanitary conditions are fairly satisfactory and an improvement is noticed every year.

Occupations.—Fishing, during the season, is mostly followed by these people, and hunting fur-bearing animals during the winter season. A few of the men remain at home, making Indian curios out of wood and stone, and their women making fancy and useful baskets.

Buildings.—They have comfortable homes, mostly well furnished.

Education.—They have a day school, the children are bright and intelligent, and when they are at home make good progress.

Characteristics and Progress.—These Indians are industrious, self-supporting and well-to-do.

Temperance and Morality.—Very few cases of intemperance were reported, and the morality of these Indians is improving under the guidance of the missionary and doctor.

MASSET BAND.

Tribe or Nation.—The Massett Indians, like those of Skidegate, are of the Haida nation.

Reserves.—The reserves of this band are located on Graham island, one of the Queen Charlotte group, and have an area of 1,872 acres. The land is level, and mostly adapted for agriculture.

Population.—The population is 362.

Health and Sanitation.—The health of these Indians has slightly improved during the year, but measles resulted fatally in several cases. The sanitary conditions have improved.

Occupations.—They engage in fur-seal hunting, and in search of sea-otter and bear. During the fishing season they migrate to the Skeena. They do some wood and stone carving, but they are not as well versed in that line of work as the Skidegate Indians.

Buildings.—They have some very comfortable dwellings, but in many instances the furniture is lacking.

Stock.—They have a few horses and cattle.

Education.—One day school, under the direction of the Rev. W. E. Collison, and taught by H. Edenshaw, is carried on during the year.

Characteristics and Progress.—They are law-abiding, and make fair progress along the lines of civilization.

Temperance and Morality.—Very rarely intoxicants are found in their possession. Morality is also improving.

KITLACDAMAX BAND.

Tribe or Nation.—These Indians belong to the Neishga nation.

Reserves.—The reserves of this band are situated at the head of Nass river, and are well adapted for agricultural purposes; some small reserves are located at the mouths of small streams and are used for camping grounds during the salmon-curing for food purposes, by this band of Indians.

Population.—The population is 108.

Health and Sanitation.—There has been no epidemic among these Indians, and their houses are fairly clean.

Occupations.—Fishing is the occupation during the seasons and hunting and trapping during the winter.

Buildings.—The buildings are warm and comfortable old style Indian houses.

Stock.—They own a few horses and cattle.

Education.—Some of the children attend the school at Aiyansh; they have no school of their own.

Characteristics and Progress.—They show advancement, are industrious and self-supporting.

Temperance and Morality.—They have been little addicted to intoxicants. Their morality is improving.

AIYANSH BAND.

Tribe or Nation.—They belong to the Neishga nation.

Reserves.—This reseration is situated adjoining the southern portion of the Kitlacdamax reserve, and has an area of nearly 2,300 acres. The land is level and well adapted for mixed farming. They have small fishing stations, which they use when securing food.

Health and Sanitation.—No serious illness has been among these Indians. The sanitary arrangements are good and are enforced under the direction of the council and Rev. J. B. MacCullagh.

Buildings.—They have comfortable dwellings and several nicely furnished.

Occupations.—Farming, fishing and hunting are the occupations of these Indians.

Education.—One day school is kept open the greater portion of the year.

Characteristics and Progress.—These Indians are very enterprising. They have improved and advanced.

Temperance and Morality.—Very few liquor cases have been reported. Morally their record is good.

LACHKALSAP BAND.

Tribe or Nation.—These Indians are of the Neishga nation.

Reserves.—The reserves of this band are located on the Nass river about 15 to 20 miles from its mouth, having a total acreage of 4,356½. The small reserves are old Indian villages located at the mouths of small salmon streams.

Population.—The population is 144.

Health and Sanitation.—The health of this band has been fairly good, except that an epidemic of measles visited this reserve. Sanitary conditions show continued improvement.

Occupations.—These Indians are good fishermen, and during the salmon season fish for the Nass river canneries, the women working inside washing fish and filling cans. They engage largely in the oulachon fishing during March and April, curing and extracting grease from this important item of food of northern coast Indians. They are good hunters and obtained a fair catch of furs. They also do some hand-logging.

Buildings.—Their dwellings are comfortable, and their old style Indian houses are warm.

Stock.—These Indians have a few cattle.

Education.—They have a small day school, taught by Rev. E. P. Laycock, their spiritual adviser; during his tuition the children made very good progress.

Temperance and Morality.—They are fairly temperate and moral.

KITNILLUCHSHILT BAND.

Tribe or Nation.—These Indians are of the Neishga nation.

Reserve.—This small reservation is located on the Nass river, just below the canyon.

The land in some places is suitable for gardens, but cannot be called agricultural land.

Population.—The population is 56.

Health and Sanitation.—The health of this small band is improving. Sanitary conditions are more satisfactory.

Occupations.—Fishing and hunting cover the industries they engage in.

Buildings.—They occupy the old style Indian houses.

Education.—Some of the children attend school at Lachkalsap.

Characteristics and Progress.—They are inclined to be careless about themselves, but are making slow progress for the better.

Temperance and Morality.—They are fairly temperate and moral.

KINCOLITH BAND.

Tribe or Nation.—They belong to the Neishga nation.

Reserves.—The reserves of this band are located on the lower Nass river, Portland canal, and Observatory inlet. They contain a total area of 5,135 acres. The larger reserves are mostly mountainous and of little commercial value. The small reserves are old Indian villages, and are laid off at the mouth of small streams, from which the Indians of this band secure their salmon for food purposes; small gardens are found on them.

Population.—The population is 250.

Health and Sanitation.—An epidemic of measles visited this village, and the school had to be closed for a time, otherwise their health was fair during the year. Sanitary conditions are very satisfactory in this village.

Occupations.—These people are good workers. During the winter they are engaged in logging, hunting and cutting wood; in the spring in oulachon-fishing for food purposes; during the salmon-fishing season they fish for the canneries, and the women work in the canneries filling cans and cleaning fish.

Buildings.—They have good comfortable dwellings, in many cases well furnished.

Education.—They have one day school, taught by Miss E. Collison, daughter of the Ven. Archdeacon Collison. The children made excellent progress, and the parents are taking more interest since their children have a white teacher.

Characteristics and Progress.—These Indians are among the most advanced in the agency and are making good progress.

Temperance and Morality.—They are fairly temperate and of good moral character.

PORT SIMPSON BAND.

Tribe or Nation.—They belong to the Tsimpsean tribe.

Reserves.—This is the principal reserve in this agency from the standpoint of size, the total area is nearly 31,000 acres, the land in general is unfit for cultivation, but portions of it are suitable for vegetable gardens. Port Simpson, the home of this band of Indians, is one of the oldest places on this coast.

Population.—The population is 703.

Health and Sanitation.—The health of these people has been good, except that an epidemic of measles, which swept this agency, carried off several of the full-grown people who were likewise affected with tuberculosis.

Occupations.—These Indians are industrious people. They are good hunters, loggers, mill-hands and fishermen.

Buildings.—They have nearly all comfortable dwellings, which in most cases are well furnished.

Education.—The Crosby Girls' Home is one of the up-to-date institutions of this agency. Miss Paul, the principal, and her staff of lady assistants are doing excellent work. The boys' boarding school, Mr. Chs. H. Johnston, principal, is likewise doing good work. The day school is in charge of Mr. B. A. Savage, and is well attended when the people are at home.

Characteristics and Progress.—These people are industrious and progressive.

Temperance and Morality.—They are fairly temperate and moral.

METLAKATLA BAND.

Tribe or Nation.—They belong to the Tsimpsean tribe.

Reserves.—Out of the southern half of the Tsimpsean reserve, these people surrendered 13,519 acres to the government for the use of the Grand Trunk Pacific Railway Company, for which they received $7.50 per acre, leaving them a balance of 15,453 acres of the southern half in addition to the northern half. Some of the land has very good soil, which the Indians are cultivating, raising their own vegetables.

Population.—The population is 194.

Health and Sanitation.—The health of these Indians was fair during the year, except that like those of Metlakatla, they were visited by the measles. Tuberculosis has not increased during the year. Sanitary conditions are good.

Occupations.—Fishing is the principal source of their income, some are employed on the Grand Trunk Pacific railway.

Buildings.—These Indians have very comfortable dwellings, their furnishings are mostly up-to-date.

Education.—The Metlakatla industrial school, under the direction of Mr. J. R. Scott, had a full complement until the summer holidays. At the commencement of the summer holidays most of the older boys were discharged on account of their proficiency or having obtained the age limit (18 years), and at the reopening of the school, after the holidays, many of the remaining pupils were prevented by the epidemic of measles from returning. The school, therefore, in the boys' division during the latter half of the year, had a very limited attendance, less than half the usual number; while in the girls' division so few returned after the holidays, on account of the epidemic of measles, that it was considered unadvisable to reopen it. The Indian day school was under the direction of Miss Jackson the first half of the year, the latter half under Miss Johnson; the children made good progress.

Characteristics and Progress.—These Indians are industrious and law-abiding, and are making steady progress.

Temperance and Morality.—They are a temperate and moral people, with but few exceptions.

KITKATLA BAND.

Tribe or Nation.—They are of the Tsimpsean nation.

Reserves.—The principal reserve is located on Dolphin island; the total area, including several small fishing reserves, is 4,640 acres.

Population.—The population of this band is 207.

Health and Sanitation.—The health of these people has been fairly good this year; sanitary conditions are improving.

Occupations.—These Indians are chiefly engaged in hunting, fishing and logging.

Education.—They have a day school, under the direction of Rev. R. H. Gurd, and taught by an Indian teacher.

Characteristics and Progress.—They are very superstitious. The progress is fair.

Temperance and Morality.—They are fairly temperate and moral.

PORT ESSINGTON, KITSUMKELUM AND KITSELAS BANDS.

Tribe or Nation.—These Indians are of the Tsimpsean nation.

Reserves.—The reserves of these Indians are all located on the Skeena river. The Port Essington special reserve adjoins the town of Port Essington. The Kitsumkelum and the Kitselas reserves, situated some 70 or 80 miles up the Skeena river, contain some good agricultural land.

Population.—The population is 191.

Health and Sanitation.—The health of these people has not been very good, the epidemic of measles visited this village and several cases of tuberculosis are reported. Sanitation is improving.

Occupations.—These Indians depend mostly on fishing, hunting, logging and working at the canneries.

Buildings.—The houses are mostly very poor and dilapidated.

Education.—These Indians have a day school. Miss Tranter, the teacher, has the children well in hand, and they are making excellent progress.

Characteristics and Progress.—They are industrious, and are making progress.

Temperance and Morality.—They are not very temperate, but have improved during the past year. They are fairly moral.

HARTLEY BAY AND CHINA HAT BANDS.

Reserves.—The reserves of these people are situated on the coast line, and in general are of rugged nature and not adapted for agricultural purposes; they are useful principally as hunting grounds.

Population.—The population is 155.

Health and Sanitation.—The health of these two small bands has been fairly good. Sanitary conditions are quite satisfactory.

Occupations.—Fishing, hunting and logging are their chief occupations.

Buildings.—They live mostly in the old style Indian houses.

Education.—They have a day school in each village, the children are making good progress.

Temperance and Morality.—These Indians are temperate and moral, with but few exceptions.

KITLOPE BAND.

Reserve.—This reserve is located on Gardner channel, and is suitable for hunting purposes only.

Population.—The population of this small band is 67.

Health and Sanitation.—The Indians are fairly healthy. Sanitary conditions are improving.

Occupation.—These Indians mostly make their living by hunting and fishing.

Buildings.—These are uninviting in appearance, but are fairly comfortable.

Education.—They have no school; a few of the children attend the Kitimat school.

Temperance and Morality.—They are mostly temperate and moral.

KITIMAT BAND.

Reserves.—The reserves of these people are all situated on Douglas channel, and are not adapted for agricultural purposes.

Population.—The population is 268.

Health and Sanitation.—An epidemic of measles visited this village during the winter, no other serious sickness has been reported. Sanitary conditions are improving.

Occupations.—Fishing, logging, hunting and working at the canneries are their principal occupations.

Buildings.—They have very good dwellings, but these are not kept very clean inside.

Education.—They have an Indian day school, the children are making good progress under the tuition of Miss Bower, M.D.

Temperance and Morality.—They are a temperate people, and fairly moral.

BELLA BELLA BAND.

Reserve.—The reserve of this band is situated in the Coast district, with a total area of 3,372 acres.

Population.—The population is 318.

Health and Sanitation.—The health of these Indians has been fair, excepting an epidemic of measles.

Occupations.—Hunting, fishing, working in the canneries and building boats are the means of support of these Indians.

Buildings.—Their dwellings are comfortable and warm.

Education.—Under the tuition of Miss Morris the attendance at school has very much increased; the progress of the children is excellent.

Temperance and Morality.—These Indians are fairly temperate, their morality is improving.

KEMSQUIT, TALOMEY AND BELLA COOLA BANDS.

Reserves.—The Kemsquit reserves are located at the head of Dean channel, and contain a total area of 930 acres. The Talomey and Bella Coola reserves are located on the southern and northern arms respectively of Bentic arm, and contain a total area of 4,007 acres. The Kemsquit reserves contain some agricultural land and fair-sized timber. Very good soil is distributed through the Talomey reserves and some fine timber. The Bella Coola reserves have the finest soil and excellent timber, with large tidal flats producing excellent grass. The Bella Coola reserve has been partly surveyed into small farms.

Population.—The population of Kemsquit is 63, of Bella Coola and Talomey, 216.

Health and Sanitation.—The health of these people has been fair, the epidemic of measles, which likewise visited this part of the agency, had no serious consequences Sanitary conditions are improving.

Occupations.—The principal occupations of these people are fishing and working at the canneries, some farming and hunting.

Stock.—They have a few horses and cattle.

Education.—One Indian day school, teacher Miss E. Gibson, daughter of Rev. Mr. Gibson, the resident missionary at Bella Coola, is kept open most of the year. The children have made good progress.

Temperance and Morality.—These people are fond of liquor, but through strict enforcement of the law, their indulgence is somewhat checked. Their morality is improving.

OWEEKAYNO BAND.

Reserves.—The reserves of this band are situated at the head of Rivers inlet, and contain a total area of 1,761 acres. The land may be classed as worthless, except for hunting and fishing purposes.

Population.—The population is 102.

Health and Sanitation.—The health of these Indians has somewhat improved during the year. Sanitary conditions show likewise a slight improvement.

Buildings.—The buildings of this band are of the old Indian style.

Characteristics and Progress.—They are of an indolent disposition. They show very slight progress.

Temperance and Morality.—They are not a temperate people. Morally there is an improvement noticeable.

GENERAL REMARKS.

The great amount of work in connection with this agency, and the fact that I have been in office only since February 15, 1908, prevent me from furnishing as

complete a report as I otherwise should like to send forward, and I had to rely largely on the report of my predecessor in office, and for statistics I shall have to do the same.

I have, &c.,

E. LORENZ,
Indian Agent.

BRITISH COLUMBIA,
STIKINE AGENCY,
TELEGRAPH CREEK, April 2, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the Stikine agency for the year ended March 31, 1908.

Reserves.—Reserve No. 1 is situated on the north side of the Stikine river, 12 miles northeast of Telegraph creek, and consists of 375 acres, on which is situated the village. It is divided by the Taltan river, where the Indians secure their fish during run of salmon. Reserve No. 2 is about 1 mile farther north and consists of 40 acres, a part of which is wild hay meadow, producing about 5 tons.

Population.—The population of the Taltan band is 232.

Health and Sanitation.—The general health of the band has been good the past season. The sanitary condition of the village is very good.

Occupations.—The occupation (generally) is trapping fur-bearing animals during the winter months. Most of the young men of the band are engaged during the summer as packers, boatmen and guides for hunting parties, while the older ones remain on the reserve fishing.

Buildings.—The buildings are all comfortable log houses.

Stock.—During the last few years the Indians have been buying some pack horses, they have at present 15 head.

Farm Implements.—The Indians of this agency have no farm implements.

Education.—An assisted school is situated at Telegraph Creek, being partly maintained by the provincial government and local help. Owing to the fact that some of the Indian families are away at different times during the term, it is impossible to have a regular attendance. The children that attend regularly are doing very well, and they all appreciate the interest the government has taken in the matter.

Characteristics and Progress.—The Indians of this agency are industrious and law-abiding and appear to be looking more to their future welfare.

I have, &c.,

G. D. COX,
Indian Agent.

British Columbia,
West Coast Agency,
Alberni, April 1, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report on the affairs of this agency for the fiscal year terminating on March 31, 1908.

Location of Agency.—This agency extends from Otter Point to Cape Cook, a distance of 200 miles along the west coast of Vancouver island.

Tribe or Nation.—The Indians of this agency belong to the Aht nation and comprise at present 18 bands; some of them are much intermarried with other bands which happen to be located comparatively near them.

Reserves.—The 18 bands forming this agency have 150 reserves and fishing stations, aggregating 12,390 acres, or about 5 acres per head of population. There are two large reserves in Barkley sound, one at Alberni, belonging to the Tseshaht band, containing 1,030 acres, and the other at Numukamis, Sarita valley, belonging to the Ohiat band, and containing 1,700 acres. The areas of the other reserves are small, varying from 2 acres up to 250 acres each. The majority of these reserves are rocky or heavily timbered, having been given primarily as fishing stations or as village sites and contain only small patches suitable for cultivation.

TSESHAHT BAND.

Reserves.—The principal reserves of this band and where the Indians have their most permanent home is named Tsahaheh (No. 1) and is situated on the west bank of the Somas river at Alberni, and comprises an area of 1,030 acres. There is some good land on this reserve. The total area of all their reserves is 1,458 acres.

OPITCHESAHT BAND.

Reserves.—The principal reserve of this band and their most permanent home is named Ahahwinnis (No. 1) and is situated on the east bank of the Somas river at Alberni, and contains 96 acres. The total area of all their reserves is 422 acres.

HOWCHUCKLISAHT BAND.

Reserves.—The principal reserve of this band and where the Indians reside is named Elhlateese (No. 3) and is situated at the head of Howchuklisaht harbour, Alberni canal, and comprises an area of 400 acres. The total area of all their reserves is 575 acres.

OHIAT BAND.

Reserves.—The principal reserves of this band and where the Indians principally live, are named Ahadzooas (No. 7) and Haines Island (No. 8) and are situated at the eastern entrance of Barkley sound, and comprise an area of 145 acres. The Indians also spend several months of each winter at Numukamis reserve in the Sarita valley. The total area of all their reserves is 2,671 acres.

TOQUAT BAND.

Reserves.—The principal reserve of this band and where the Indians have most of their houses is named Mahcoah (No. 1) and is situated at Village passage, Barkley sound, and contains 124 acres. The band is a small one and a good deal intermarried with the Ewlhuilhaht band and often resides with them at Ucluelet. The total area of all their reserves is 421 acres.

EWLHUILHAHT BAND.

Reserves.—The principal reserve of this band and their general residence is named Ittatso (No. 1), is situated on Uclulet arm, Barkley sound, and comprises an area of 180 acres. The total area of all their reserves is 649 acres.

CLAYOQUOT BAND.

Reserves.—The principal reserve of this band and their permanent home is named Opitsat (No. 1), is situated on Clayoquot sound, and contains 180 acres. The total area of all their reserves is 540 acres.

KELSEMAHT BAND.

Reserves.—The principal reserve of this band and their home for the greater part of the year is named Yahkis (No. 11), is situated on Flores island, Clayoquot sound, and contains 180 acres. The total area of all their reserves is 223 acres.

AHOUSSAHT BAND.

Reserves.—The principal reserve of this band and their winter home, named Mahktosis (No. 15), is situated on Matilda creek, Clayoquot sound, and comprises an area of 250 acres. The total area of all their reserves is 826 acres.

HESHQUIAT BAND.

Reserves.—The principal reserve of this band and their most permanent residence, named Heshque (No. 1), is situated at Heshquiat harbour, about 20 miles north of Clayoquot sound, and contains 222 acres. A number of the Indian houses of this village are in reality built on land belonging to the Roman Catholic Church as represented by Very Rev. Dean Brabant, who took up the land over forty years ago and allowed the Indians to build on it. The total area of all their reserves is 577 acres.

MOACHAHT BAND.

Reserves.—The principal reserve of this band and where the Indians mostly reside, named Yuquot (No. 1), is situated at Friendly cove, Nootka sound, and contains 211 acres. The total area of all their reserves is 527 acres.

MATCHILAHT BAND.

Reserves.—The principal reserve of this band and where the Indians have most of their houses, named Cheshish (No. 1), is situated in the rear of Bligh island, Nootka sound, and contains 29 acres. Many of this band live much of their time with the Moachaht band, with whom they are much intermarried. The total area of all their reserves is 127 acres.

NOOCHATLAHT BAND.

Reserves.—The principal reserve of this band and their chief home, named Noochat (No. 1), is situated on Esperanza inlet, and comprises an area of 16 acres. The total area of all their reserves is 188 acres.

EHATTISAHT BAND.

Reserves.—The principal reserve of this band and their winter home, named Oke (No. 10), is situated on Esperanza inlet and contains 32 acres. The total area of all their reserves is 123 acres.

KYUQUOT BAND.

Reserves.—The principal reserves of this band, and where the Indians make their permanent home, are named Aktese (No. 1) on Village island, and Kukamukamees (No. 2) on Mission island, comprising an area of 193 acres. These islands form part of the Barrier islands group. The total area of all their reserves is 611 acres.

CHAICCLESAHT BAND.

Reserves.—The principal reserve of this band, and their most permanent home, named Acous (No. 1), is situated in Battle bay, Ououkinsh inlet, and comprises an area of 100 acres. The total area of all their reserves is 258 acres.

NITINAT BAND.

Reserves.—The principal reserves of this band and where the Indians most generally reside, are named Tsooquanah (No. 2), Wyah (No. 3), Clo-oose (No. 4) and Carmanah (No. 6), all of which are situated at the entrance of the straits of Juan de Fuca and comprise an area of 773 acres. The total area of all their reserves is 1,790 acres.

PACHEENAHT BAND.

Reserves.—The principal reserve of this band and where the Indians live when at home, named Pacheena (No. 1), is situated at the mouth of the San Juan river at Port Renfrew, and contains 153 acres. The total area of all their reserves is 404 acres. Many of this band spend much of their time living with the Nitinats, with whom they have been intermarrying for a long time.

REMARKS APPLYING TO THE WHOLE AGENCY.

Population.—The population of the various bands hereinbefore enumerated is as as follows:—Ahoussaht, 236; Clayquot, 217; Chaicclesaht, 62; Ehattisaht, 93; Ucluelet, 134; Hesquiat, 142; Howchuckliset, 37; Kelsemaht, 75; Kyuquot, 255; Matchilaht, 57; Moachaht, 143; Nitinat, 195; Noochatlaht, 49; Ohiat, 148; Opitchesaht, 51; Pacheenaht, 53; Toquot, 27; Tseshaht, 119; making a total of 2,093.

Health and Sanitation.—The birth-rate for the past year is practically the same as for the previous year. The death-rate has increased somewhat. There is a reduction of 40 on the total population, not a very large percentage of over 2,000 people, but the diminution is constant and applies in a greater or less degree to every band. Occasionally a band will show an increase of two or three souls during the year, but this is generally due either to immigration from some other band or perhaps to the

correction of an error in the records. All the bands are decreasing, but some much more rapidly than others. The Kyuquots, long the most numerous on the west coast, are declining rapidly and will soon have to yield the premier place to the Ahoussaht band, which, though also lessening in numbers, are only doing so slowly, and, as they have a very fair number of children and young people, bid fair, in time, to hold their own and perhaps even increase. A certain amount of vaccination was performed, but the Indians strongly object to it, as it is so likely to give them serious and long continuing sores, their blood being generally so impure that a sore once started will sometimes not heal for a year. Owing to the sanitary conditions being better and greater facilities existing for taking care of them after vaccination in the industrial and boarding schools, I have seen that the pupils of those institutions have all been attended to, and in most cases with but little trouble.

Two cases of typhoid fever occurred at Ucluelet during the late summer, but owing to the prompt measures taken by the department's medical officer, Dr. C. McLean, who resides there, the outbreak was confined to the original imported cases and spread no further. Measles has been epidemic in many of the bands during the late fall and winter, and a number of the children fell victims either to the attack of the disease itself or to tubercular complications following want of care during the time of convalescence. The disease found its way into the three large industrial and boarding schools in the agency; but, owing to the care exercised by the staff and the maintenance of proper precautions while the patients were beginning to recover, no case resulted fatally nor even proved of a serious character. Consumption, as always, caused a number of deaths. The department at my suggestion granted permission to spend a sum of money from the trust fund of the Kyuquot band to drain a slough lying close to the houses on one of their principal reserves at Kyuquot, as it was considered that a body of dirty stagnant water so close to their houses and wells could not but be prejudicial to their health. It is also hoped that the land thus drained may prove suitable for garden purposes, and later on, perhaps, the Indians may be induced to grow some vegetables which would be a valuable adjunct to their invariable fish diet. The department also granted a sum to bring clean drinking water into the village of the Nitinat band at Claoose, as the water they were in the habit of using was at many seasons of the year stagnant and contaminated.

The fact that very few of the Indians reside on the same reserve for a whole year continuously results in better sanitary conditions around their villages than would be expected by observing their ordinary habits; but in their absence the hot sun in the summer and the almost incessant rains of the winter months serve as natural scavengers and leave the village clean when the Indians return to it.

Occupations.—Formerly it could be said that, substantially, these Indians had but two occupations, namely, sealing and fishing. Both these sources of livelihood have decreased so much of late years that the Indian has had perforce to seek other sources of income. So great has been the falling off in the seal catches that, whereas the Indians used to return home with plenty of money when they were only receiving $2 per skin, yet now when the average price is $9 to $10 per skin, it is not nearly so remunerative either to the Indians or to those who operate the schooners which carry the Indians as seal-hunters to the Behring sea, and at present, indications point to very few schooners being sent to Behring sea this season.

So with the other main branch of their occupation,—fishing. Most of these Indians who did not go sealing almost invariably went to the Fraser river and fished for the canneries there, being paid so much for each fish caught and often they made very good wages during the fishing season, but the run of salmon is now so poor on the Fraser river, (except in every fourth year) that this also holds out very little inducement to the revenue-seeking Indian. As an alternative they have in some instances been able to obtain work in saw-mills and in logging camps, especially last summer, when white men were extremely scarce and in much demand. A number of the Kyuquot band at Kyuquot and of the Tseshaht band at Barkley sound obtained

remunerative and congenial employment at the whaling stations situated at the places just named. The work was not too exacting, the employment was steady and lasted for the whole season and it afforded them the opportunity of getting an abundance of whale meat, a diet of which they are fond.

The women also work in the canneries and in the whaling stations when they can get work, and spend a great deal of time in the winter and spring months making baskets out of the inner bark of the cedar-tree skilfully interwoven with fine dyed grasses; and these find a ready market in towns for sale to tourists and others.

Buildings.—The number of new buildings erected during the past year has been small and those erected were, for the most part, of but little importance. Last summer not only was lumber at an exorbitant price, but it was very scarce, and hardly any could be obtained from the saw-mills in the district, and to ship it in from outside sources would have made the price prohibitive. As a rule the Indian postpones building operations until he has a chance to collect some lumber from the sea, thrown or washed overboard from some vessel in distress or perhaps part of the cargo of a total wreck. Owing partly to the precautions adopted by another branch of the federal government to safeguard the shipping off the west coast of this island, the past winter has seen no wrecks take place on this coast; a marked improvement, as generally several have to be chronicled every winter. Owing partly to the high price of lumber and also to more modern ideals gaining ground among the Indians, it is the custom now generally to build a house of moderate dimensions suitable for the use of only one family, instead of the huge structures made out of hewn cedar boards which used to be the rule. I imagine that the very large houses were, more often than not, the product of slave labour, and, as that is a thing of the past, the individual Indian will hesitate before incurring the tremendous work involved in hewing out of the log the old-fashioned house. Many of these old houses are still standing, a monument to the energy of their forefathers, with beams, perhaps thirty feet long and three feet in diameter and raised on posts twenty or more feet high, while the sides are closed in with hewn boards, sometimes twenty feet long and as much as four feet in width.

Stock.—The reserves in this agency are with very few exceptions quite unfit for any kind of agriculture unless with an expenditure of an enormous sum of money and labour, and even then the result would be more than doubtful, as many of the reserves are rocky and others would only be third-class land when expensively cleared. The Tseshats and Opitchesahts at Alberni keep a few horses, but more for the sake of being able to drive about with a buggy than with any idea of profitable employment. Douglas and Santos of the Tseshaht band own each a team of work horses and occasionally haul fire-wood, &c. The Opitchesahts, whose reserve is close to Alberni, have some excellent land on their reserve, and might do well raising potatoes.

Farm Implements.—For the reasons stated above, there are very few farm implements among these Indians. The Tseshahts own two or three wagons, and Harry Thomas owns a mowing-machine. There is also a plough on the reserve and a set of harrows, the latter supplied them by the department.

Education.—There are in this agency 10 schools, which is more in proportion to the population than in the other agencies in British Columbia. They consist of an industrial school at Clayquot, a boarding school at Alberni, and another one at Ahoussaht, and seven day schools in various parts of the agency.

Industrial School.—This is situated on Meares island, near Clayoquot, and is conducted by the Roman Catholic Church. Rev. P. Maurus, O.S.B., is principal and Sister Mary Francis Xavier is matron. There are four more of a staff, including a manual instructor. The annual report of the reverend principal, which will be found in another part of this volume, will well repay perusal, giving as it does an admirable epitome of the objects, practice, and results of the work to which he has devoted his life's energies.

Boarding Schools.—These are both in charge of the Presbyterian Church. The staff in each school is the same as reported in former years with the exception that Miss N. Parkins has taken the place of Miss Millar as assistant matron at Ahoussaht. Both schools have a good attendance.

Day Schools.—These are located as follows: Kyuquot, taught by Rev. Father Sobry; at Clayoquot, taught by Rev. C. Moser; at Nootka, taught by Rev. A. S. Stern; these are all of the Roman Catholic faith; at Clayoquot, taught by Rev. G. T. Barlow; at Cla-oose, taught by C. A. Dockstader; these are of the Methodist belief; at Uclutet, taught by Mrs. M. Swartout, and at Dodger's Cove, taught by J. T. Ross, under the auspices of the Presbyterians. The last-named school was opened for the first quarter of the fiscal year, the teacher and missionary, Mr. Ross, having to leave then owning to the serious illness of Mrs. Ross, and no one was appointed by the church to fill the vacancy. I think it can be fairly said that the Indians are more disposed than formerly to see their children educated. Owing to the industrial and commercial development now taking place on this coast and the consequent influx of white people, the Indians are brought much more in contact with white men and they are beginning to realize the advantages of a knowledge of the English language. Changing conditions are also compelling the Indians to look for employment from white men, and in several instances it has been brought home to them by certain large employers such as saw-mills, &c., refusing to take on those Indians who could not understand orders given in English. Of course there is a small element, as there would be in any community, of irreconcilables who cling obstinately to the belief in, and observance of, the old and ignorant superstitions and who would fain see the younger generation trained in the same manner, but the younger men, even while yielding to the pressure of the older people, are losing confidence in their own customs, and better things may reasonably be expected when the children of the young men and women now passing out of the schools, come, in their turn, under the influences of Christian instruction and education. As a rule, when capably instructed, the children are anxious to learn and make rapid progress.

Characteristics and Progress.—The Indians of this agency are, with the exception of one band, of a quiet and peaceable character. Really serious crime has not occurred during the past year. Their greatest temptations are towards drinking and gambling, and, when under the influence of the former, they are apt to be violent. Many of them who would not voluntarily seek to obtain liquor, seem unable to resist the temptation of drinking it when brought within their reach. The prospects for this year do not look so encouraging for the Indians as at this time last year. Then there was a scarcity of white labour and a great deal of activity in all branches of the lumber business, and many of the Indians got well paid employment in these lines of work. This season there is more or less stagnation in the lumber industry and white labour is plentiful and will generally be given the preference. It does not seem at present as if there would be nearly as many schooners as usual taking Indian crews to Behring sea this summer. This is no doubt partly due to decreased catches, but also in some part to the exactions made last year by the Indians, not only holding out for a high price per skin, but demanding excessive advances and in some cases rather taking advantage of the sealing company.

Temperance and Morality.—Probably the only band which is absolutely temperate from conviction is that of the Hesquiats, where the Very Rev. Dean Brabant has taught and laboured for thirty and more years. In most of the other bands drinking will occasionally occur as opportunity offers. In every band there are, of course, a praiseworthy few who would not touch intoxicants. It is, however, absolutely certain that in no part of this agency is there sufficient drinking to have ill effects on the health or well-being of the band. This is due in a large measure to the strict liquor laws enacted by the government of Canada and to their prompt enforcement by the local constabulary employed by the provincial government. Immorality amongst the

Indians themselves is not common. They have a bad habit of abandoning their wives and taking others, which leads to much trouble; but while they are living with a woman they are generally faithful. In the vicinity of white settlements there is a certain amount of prostitution, but on the whole they are as a race quite as virtuous as one could expect.

General Remarks.—The death is announced at her old home in Ontario of Mrs. J. T. Ross, wife of the missionary of that name, after a long illness borne with Christian patience. Mr. and Mrs. Ross worked among the Indians at Alberni some twelve years ago, and even to-day are kindly remembered by the Indians. Later, Mr. Ross was stationed at Ahoussaht and for some years past at Dodger's Cove, a reserve of the Ohiat band, and moving twice a year to Numukamis, another reserve of the same band. The deceased lady was highly esteemed by all who knew her and won the entire confidence of the Indians among whom she dwelt. The privations incidental to the life of a pioneer missionary on this coast were no doubt largely responsible for the contraction of the disease to which she succumbed. It is but another instance of a bright young life, full of hope and promise, cheerfully laid down in the cause of the spiritual elevation of these as yet ignorant natives, and while Mrs. Ross did not live to see large and important changes resulting from her labours, yet I doubt not that succeeding missionaries and future generations of Indians will reap the fruits of her self-sacrifice and that, like the widow of old, her offering of 'all she had' will not go unrewarded by Him 'who seeth all things and knoweth all things.'

I have, &c.,

ALAN W. NEILL,

Indian Agent.

BRITISH COLUMBIA,
WILLIAMS LAKE AGENCY,
CLINTON, March 31, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location.—The Williams Lake agency is situated north and partly west of the Kamloops-Okanagan agency, south of the Babine agency, having the Rocky mountains as a portion of its eastern boundary and the Fraser agency for its western boundary. This agency contains an aggregate of 90,080 acres.

Population.—The population of this agency is 1,995.

ALEXANDRIA BAND.

Reserve.—The reserve of this band is situated on both sides of the Fraser river and about 400 miles from its mouth. It contains an area of 1,858½ acres. Its natural features are good grazing lands which require irrigation when cultivated. There are also good hay meadows on this reserve.

Population.—This band has a population of 52.

Health and Sanitation.—The health of the members of this band has been good; no epidemic of any kind visited them. They have comfortable homes, which are kept in good order, and all the surroundings are in a good sanitary condition.

Occupations.—Farming, hunting fur-bearing animals and working as farm-hands with white settlers are the principal occupations of these Indians.

Buildings.—They have comfortable dwellings and good horse stables.

Stock.—They have quite a number of horses and cattle.

Farm Implements.—They have a fair supply of farm implements.

Education.—There is only one school in the agency, the Williams Lake industrial, situated at Williams lake. Quite a number of children from this reserve have attended this school and made good progress.

Characteristics and Progress.—They are industrious and law-abiding, but, owing to the scarcity of water for irrigating their lands, have not made much progress.

Temperance and Morality.—They are moral and, with one exception, temperate.

ALKALI LAKE BAND.

Reserve.—The reserve of this band is situated on the east side of the Fraser river 320 miles from its mouth. It contains 8,347½ acres. Its natural features are good farming and grazing lands, but unfortunately water for irrigation is not available and in consequence not much land can be cultivated. It is nearly all under fence and used for pasture. There are also good hay meadows, from which large quantities of hay are cut.

Population.—The population of this band is 179.

Health and Sanitation.—The health of this band has been good. There were no epidemic diseases amongst them. Premises are kept in a sanitary condition and no deaths occurred during the year.

Occupations.—Farming, stock-raising and working as farm-hands with white settlers are the chief occupations, while quite a number are engaged as packers and cowboys.

Buildings.—They have good dwellings and horse stables.

Stock.—These Indians own quite a number of horses and cattle and a few pigs.

Farm Implements.—They are well supplied with farm implements.

Education.—Williams Lake industrial school being the only school in the agency, quite a number of their children are being educated there and the parents take much interest in their progress.

Characteristics and Progress.—They are industrious and law-abiding and making steady advancement.

Temperance and Morality.—They are temperate and moral.

ANAHAM BAND.

Reserve.—The reserve of this band is situated in a valley near the Chilcotin river, about 50 miles from its mouth. It contains 9,922 acres. The natural features are open bench-lands, good hay meadows and fair timber.

Population.—The population of this band is 224.

Health and Sanitation.—With the exception of a few cases of grippe, no sickness was reported amongst them. Sanitary precautions are well observed.

Occupations.—Their chief occupations are farming, stock-raising, freighting, working as farm-hands and cowboys with white settlers. Some engage with hunters of big game.

Buildings.—They have a good class of dwellings and horse stables.

Stock.—They have quite a number of horses and cattle.

Farm Implements.—They have a good supply of farm implements.

Education.—A number of children from this band are being educated at the Williams Lake industrial school. The parents take a great interest in their advancement.

Characteristics and Progress.—These Indians are industrious and law-abiding and making good progress.

Temperance and Morality.—They are temperate and moral.

ANDERSON LAKE BAND.

Reserve.—The reserve of this band is situated at the upper end of Anderson lake, being the most southerly part of this agency. It has an area of 504 acres. The natural features are good bottom-lands, good hay meadows, good timber and good grazing lands.

Population.—The population of this band is 67.

Occupations.—These Indians farm a little, have good vegetable and fruit gardens, trap fur-bearing animals, work in salmon canneries and gold mines, and the women contribute from the sale of baskets and buckskin gloves.

Buildings.—They have good dwellings and horse stables.

Stock.—They have a few head of horses and cattle.

Farm Implements.—There is a fair supply of farm implements.

Health and Sanitation.—The health of these Indians has been good. No epidemic visited them.

Education.—They have no schools. A few children are educated at St. Mary's Mission, New Westminster.

Characteristics and Progress.—They are law-abiding and industrious and make a good living.

Temperance and Morality.—They are temperate and moral.

BRIDGE RIVER BAND.

Reserves.—The reserves of this band are along the left banks of the Fraser and Bridge rivers. The lands fit for cultivation are in small patches where good crops of grain and vegetables are raised. The total area of the reserves is 9,761 acres. The natural features are bench-lands along the rivers, all requiring irrigation when cultivated. There are good grazing lands along the mountain slopes.

Population.—The population of this band is 104.

Health and Sanitation.—The health of these Indians has been good. No epidemic has appeared. They have been vaccinated.

Occupations.—These Indians farm considerably, gold-mine at favourable stages of the rivers, act as guides to hunters of big game, and work for white settlers.

Buildings.—They have good dwellings and horse stables.

Stock.—Quite a number of horses and cattle are owned by these Indians.

Education.—They have no schools and have received no education.

Farm Implements.—They are well supplied with farm implements.

Characteristics and Progress.—They are industrious and law-abiding and making good progress.

Temperance and Morality.—They are temperate and moral.

CANOE CREEK BAND.

Reserve.—The reserve of this band is situated on a small stream which empties into the Fraser river 300 miles from its mouth. On account of the scarcity of water for irrigation, very little land is cultivated. They have an area of 16,129 acres. The natural features are open bench-lands, good grazing and fair timber lands, good hay meadows, where quite a quantity of hay is secured yearly.

Population.—The population of this band is 164.

Health and Sanitation.—No epidemic has visited these Indians and sanitation is good, premises are kept clean.

Occupations.—Farming, working at various occupations with white settlers and hunting and fishing are their principal occupations.

Buildings.—They have fairly good dwellings and horse stables.

Stock.—Quite a number of horses and cattle are owned by these Indians.

Farm Implements.—They are well supplied with farm implements.

Education.—These Indians have no school. A few children attend the Williams Lake industrial school.

Characteristics and Progress.—They are industrious and law-abiding, and making fair progress.

Temperance and Morality.—They are temperate and moral.

CAYOOSH CREEK NO. 1 BAND.

Reserve.—This reserve is situated at the mouth of Cayoosh creek where it joins the Fraser river 220 miles from its mouth. The natural features are open bench-lands and fair grazing lands. It contains 367 acres.

Population.—The population of this band is 31.

Health and Sanitation.—The health of this band has been good. Surroundings are in a good sanitary condition.

Occupations.—Farming, hunting, fishing and working as labourers with white settlers at various occupations are their chief sources of revenue.

Buildings.—These Indians have comfortable dwellings and horse stables.

Stock.—A few horses and cattle are all they own.

Farm Implements.—They have a good supply of farm implements.

Education.—A few children from this band attended the public school near Lillooet. There is no school there now.

Characteristics and Progress.—They are industrious and law-abiding, and make a good living.

Temperance and Morality.—They are temperate and moral.

CAYOOSH CREEK NO. 2 BAND.

Reserve.—This reserve is situated about 4 miles from Cayoosh Creek No. 1 reserve on a bench above the Fraser river. It contains 785 acres. The natural features are open bench-lands along the mountain-sides.

Population.—The population of this band is 11.

Health and Sanitation.—The health of this band has been good. There was no sickness of any kind; the premises are kept clean and in a sanitary condition.

Occupations.—Farming, hunting, fishing and gold-mining are their principal occupations.

Buildings.—They have good dwellings and horse stables.

Stock.—They have a few horses, cattle and pigs.

Farm Implements.—They have a fair supply of farm implements.

Education.—A few children from this band have attended the public school near Lillooet. They have no school now.

Characteristics and Progress.—They are industrious and law-abiding and making a comfortable living.

Temperance and Morality.—They are temperate and moral.

CLINTON BAND.

Reserve.—The reserve of this band is situated in the Clinton valley, and contains 1,073 acres. The natural features are small flats and meadow-lands along the banks

of a small stream running through the reserve, and timbered mountain slopes afford good grazing.

Population.—The population of this band is 48.

Health and Sanitation.—The health of these Indians has been good. Premises are kept clean and in a sanitary condition.

Occupations.—The chief occupations of these Indians are farming, freighting, working as labourers with white settlers, supplying fire-wood for the village of Clinton.

Buildings.—They have good dwellings and horse stables.

Stock.—They have a few head of horses.

Farm Implements.—They have a good supply of farm implements.

Education.—There is no school belonging to this band.

Characteristics and Progress.—They are industrious and law-abiding and make a comfortable living.

Temperance and Morality.—They are temperate and moral.

DOG CREEK BAND.

Reserve.—The reserve of this band is situated on a stream of that name which flows into the Fraser river 3 miles from the village. It contains 1,371½ acres. The natural features are open bench-lands and good grazing lands.

Population.—The population of this band is 20.

Health and Sanitation.—The health of this band has been good, dwellings are kept clean and all the Indians have been vaccinated.

Occupations.—Farming, hunting, fishing and working as labourers for white settlers, are the principal occupations.

Buildings.—They have fair dwellings and horse stables.

Stock.—They have a few horses, cattle and pigs.

Farm Implements.—They have a fair supply of farm implements.

Education.—A few children from this band have attended the Williams Lake industrial school.

Characteristics and Progress.—They are industrious and law-abiding, and making fair progress.

Temperance and Morality.—I regret to report that two young women of this band are intemperate; the chief complained to me. I fined a white man who furnished the intoxicant heavily.

FOUNTAIN BAND.

Reserve.—This reserve is situated on the east bank of the Fraser river 250 miles from its mouth. It contains 1,864 acres. The natural features are open bench-lands and good grazing lands.

Population.—This band has a population of 212.

Health and Sanitation.—With the exception of a few cases of grippe, the health of this band has been good. Premises are kept clean and sanitation well observed.

Occupations.—They farm considerably and work for white men at various occupations. They hunt, fish and gold-mine.

Buildings.—They have a good class of dwellings and horse stables.

Stock.—They have a number of horses, cattle and pigs.

Farm Implements.—They have a good supply of farm implements.

Education.—They have no schools.

Characteristics and Progress.—They are industrious and law-abiding, and are making good progress.

Temperance and Morality.—They are temperate and moral.

HIGH BAR BAND.

Reserve.—The reserve of this band is situated on the east and west banks of the Fraser river, and contains 2,924 acres. The natural features are small patches of agricultural lands and good grazing lands, which require irrigation. Unfortunately water for this purpose cannot be obtained, and in consequence they do not raise much of a crop.

Population.—The population of this band is 56.

Health and Sanitation.—The health of these Indians has been good. No epidemic visited them.

Occupations.—Farming, gardening, fishing, hunting, gold-mining and working as labourers for white settlers are their chief occupations.

Buildings.—They have fairly good dwellings and horse stables.

Stock.—They have a few horses.

Farm Implements.—They have a fair supply of farm implements.

Education.—They have no schools.

Characteristics and Progress.—They are industrious and law-abiding and are making a fair living.

Temperance and Morality.—They are temperate and moral.

CANIM LAKE BAND.

Reserve.—The reserve of this band is situated in the Bridge Creek valley, 20 miles east of the Cariboo wagon road, and contains 4,560 acres. The natural features are bench and meadow lands along the creek bottom, good grazing lands and good hay meadows. The rest of the reserve is covered with good timber.

Population.—The population of this band is 77.

Health and Sanitation.—There were quite a number of deaths at this reserve, mostly from lung trouble; otherwise the health of the band has been good. Sanitary conditions are good.

Occupations.—Farming, stock-raising, working as farm-hands with white settlers, trapping, fishing and hunting are their principal occupations.

Buildings.—They have good dwellings and horse stables.

Stock.—They have horses, cattle and pigs.

Farm Implements.—They are well supplied with farm implements.

Education.—They have no schools, but quite a number of children from this band attend the Williams Lake industrial school.

Characteristics and Progress.—They are very industrious and law-abiding and making fair progress.

Temperance and Morality.—They are temperate and moral.

LILLOOET NO. 1 BAND.

Reserve.—A portion of this reserve is situated on the west bank of the Fraser river, the remainder on the east bank; it contains 1,418½ acres. The natural features are good bench-lands, which are suitable for cultivation, but owing to the scarcity of water for irrigation, there is not much land cultivated. There are good grazing and fair timber lands on the reserve.

Population.—The population of this band is 57.

Health and Sanitation.—On the whole, the health of this band has been good and the village is kept clean. No epidemic visited these Indians.

Occupations.—Farming, freighting, hunting, fishing and working as labourers with white settlers, gold-mining and acting as guides to hunters in search of big game, are their chief occupations.

Buildings.—They have a good class of dwellings and horse stables.

Stock.—They have horses, cattle and pigs.

Farm Implements.—They are well supplied with farm implements.

Education.—They have no schools.

Characteristics and Progress.—They are industrious and law-abiding and the majority earn a good living.

Temperance.—I regret to report there is very little improvement in this respect. There have been many convictions and the dispensers of intoxicants heavily fined, with but very little effect.

LILLOOET NO. 2 BAND.

Reserve.—This is situated on the west bank of the Fraser river about 12 miles from the village of Lillooet, and contains 544 acres. The natural features are bench and timber lands.

Population.—The population of this band is 10.

Health and Sanitation.—The health of this band has been good. Their dwellings and surroundings are kept in excellent order.

Occupations.—This band does a little farming and gardening and occasionally gold-mining.

Buildings.—They have good dwellings and horse stables.

Stock.—They have a few head of horses.

Farm Implements.—They have sufficient farm implements.

Education.—There are no schools on the reserve.

Characteristics and Progress.—They are industrious and law-abiding.

Temperance and Morality.—They are temperate and moral.

PAVILION BAND

Reserve.—The reserve of this band is situated on the east and west sides of the Fraser river, and contains 4,136 acres. The natural features are good bench-lands, good grazing and very fair timber lands.

Population.—The population of this band is 68.

Health and Sanitation.—The health of these Indians has been good. There were no epidemics amongst them. Premises are kept in good order.

Occupations.—Farming, hunting, fishing, trapping, working as farm-hands for white men and acting as guides to hunters and tourists, are their chief occupations.

Buildings.—They have fairly good dwellings and stables.

Stock.—They have horses, cattle and pigs.

Farm Implements.—They are well supplied with farm implements.

Education.—There are no schools.

Characteristics and Progress.—They are very industrious and law-abiding and are making fair progress.

Temperance and Morals.—They are moral and temperate.

QUESNEL BAND.

Reserve.—The reserve of this band is situated on the east and west sides of the Fraser river 3 miles from the village of Quesnel, and contains 1,687½ acres. The natural features are flat benches along the Fraser river, the upper benches being covered with good timber.

Population.—The population of this band is 58.

Health and Sanitation.—No epidemic appeared among them. They have now removed from the village formerly occupied by them and put up new buildings on another part of the reserve, which are clean and comfortable.

Occupations.—Hunting, fishing, trapping, working as farm-hands with white settlers, and boating, are their principal occupations.

Buildings.—They have fairly good dwellings and horse stables.

Stock.—They have a few horses and cattle.

Farm Implements.—They have sufficient farm implements.

Education.—A few children from this band attend the Williams Lake industrial school.

Characteristics and Progress.—They are law-abiding, but lazy, preferring to hunt, fish, and trap, to cultivating their lands.

Temperance and Morality.—There have been no complaints in these respects.

SETON LAKE OR MISSION BAND NO. 1.

Reserve.—This is situated on the west side of Seton lake, and contains 2,085 acres. The natural features are open bench-lands, timbered mountain slopes and poor grazing lands.

Population.—The population of this band is 74.

Health and Sanitation.—The general health of these Indians has been good. There were no epidemics amongst them. Premises are in a good sanitary condition.

Occupations.—They farm a little, have good gardens in vegetables and fruit, pack, hunt, fish, gold-mine and boat.

Buildings.—They have a good class of dwellings and horse stables.

Stock.—They have a few horses and cattle.

Farm Implements.—They have a fair supply of farm implements.

Education.—There is no school.

Characteristics and Progress.—They are industrious and law-abiding, but, owing to the scarcity of water for irrigating their lands, they are not making much progress.

Temperance and Morality.—They are temperate and moral.

SETON LAKE OR ENIAS BAND NO. 2.

Reserve.—This reserve is on the east and west sides of Seton lake, and contains 188 acres. There is only one man on this reserve, depending on fishing and government support, as he is badly crippled.

SETON LAKE OR SLOSH BAND NO. 5.

Reserve.—This reserve is situated at the head of Seton lake, and contains 80 acres. The natural features are bench-lands surrounded by high mountains which are heavily timbered.

Population.—The population of this band is 34.

Health and Sanitation.—The health of this band has been good, premises and surroundings are kept in a sanitary condition.

Occupations.—Farming, gardening, boating, hunting, fishing and packing are their principal occupations.

Stock.—A few horses, cattle and pigs are owned by these Indians.

Farm Implements.—They have a good supply of farm implements.

Education.—A few children from this band are being educated at St. Mary's Mission, New Westminster.

Buildings.—They have good dwellings and horse stables.

Characteristics and Progress.—They are very industrious and law-abiding and are making a comfortable living.

Temperance and Morality.—They are temperate and moral.

SETON LAKE OR NECAIT BAND NO. 6.

Reserve.—The reserve of this band is situated at the foot of Anderson lake and contains 84 acres. The natural features are bench-lands surrounded by high mountains heavily timbered.

Population.—This band has a population of 49.

Health and Sanitation.—The health of this band has been good. No epidemic diseases visited them; their dwellings are clean and the surroundings are in a sanitary condition.

Occupations.—They farm in a small way. They have good vegetable gardens. They boat, fish and hunt. Quite a number go to the coast during the salmon-canning season, where they get good wages.

Buildings.—They have good dwellings and horse stables.

Stock.—They have a few horses and cattle.

Farm Implements.—They have a fair supply of farm implements.

Education.—They have no schools.

Characteristics and Progress.—These Indians are good workers and law-abiding, and make a comfortable living.

Temperance and Morality.—They are temperate and moral.

SODA CREEK BAND.

Reserve.—The reserve of this band is on the east side of the Fraser river and along the Cariboo wagon road. It contains 5,210 acres. The natural features in the portion along the Fraser river are bench-lands, while the portion along the Cariboo road is meadow-land. There is good grazing land and fair timber at both places.

Population.—This band has a population of 81.

Health and Sanitation.—Their health has been good. Sanitary conditions are well observed and dwellings are kept clean.

Occupations.—Farming,teaming, working as labourers with white men, hunting, fishing and trapping are their principal occupations.

Buildings.—They have good dwellings and horse stables.

Stock.—They have a few horses and cattle.

Farm Implements.—They have a good supply of farm implements.

Education.—Quite a number of children from this band are being educated at the Williams Lake industrial school.

Characteristics and Progress.—They are very industrious and making good progress.

Temperance and Morality.—They are moral. A couple are intemperate.

STONE BAND.

Reserve.—The reserve of this band is situated on the west bank of the Chilcotin river and has an area of 4,225 acres. The natural features are bench-lands, good grazing lands and hay meadows.

Population.—The population of this band is 96.

Health and Sanitation.—The health of these Indians has been good. There were no epidemics among them. The sanitary conditions are up to the average.

Occupations.—Farming, fishing, hunting, trapping, guides to hunters, cow-boys and working as farm-hands with white settlers are the principal occupations.

Buildings.—They have fairly good dwellings and horse stables.

Stock.—These Indians have a number of horses and a few cattle.

Farm Implements.—They have a fair supply of farm implements.

Education.—They have no schools.

Characteristics and Progress.—These Indians depend more for a living on hunting and fishing than on the cultivation of their lands; for the last year or two they have been doing better in this respect.

Temperance and Morality.—They are temperate and moral.

TOOSEY BAND.

Reserve.—This reserve is situated on Riskie creek, a small stream flowing into the Fraser river. It contains 6,352½ acres. The natural features are bench-lands, good grazing lands and hay meadows.

Population.—The population of this band is 62.

Health and Sanitation.—The health of these Indians has been good, and there was no epidemic amongst them. The premises and surroundings are kept clean.

Occupations.—Farming, trapping, fishing, hunting and freighting and working as farm-hands and cowboys with white settlers are their principal occupations.

Buildings.—They have good dwellings and horse stables.

Stock.—They have horses, cattle and pigs.

Farm Implements.—They have a good supply of farm implements.

Education.—They have no school.

Characteristics and Progress.—They are industrious and law-abiding and are making good progress.

Temperance and Morality.—They are temperate and moral.

WILLIAMS LAKE BAND.

Reserve.—The reserve of this band is situated in the Williams Lake valley, and contains 4,613¾ acres. The natural features are good bottom-lands and excellent hay meadows and good grazing lands.

Population.—The population of this band is 160.

Health and Sanitation.—The general health of these Indians has been good; no epidemic broke out amongst them. Their dwellings are clean and premises kept in a good sanitary condition.

Occupations.—Farming, stock-raising, teaming, hunting and fishing are the principal occupations of this band.

Buildings.—They have good dwellings and horse stables.

Stock.—They have a number of horses, cattle and pigs.

Farm Implements.—They are well supplied with all kinds of farm implements.

Education.—Most of the children from this band have attended the Williams Lake industrial school.

Characteristics and Progress.—These Indians are industrious and law-abiding and making good progress.

Temperance and Morality.—A few are fond of intoxicants when they can procure them. As a rule they are moral.

GENERAL REMARKS.

In addition to the resources of the Indians of this agency, I may add that quite a revenue is obtained by nearly all the reserves from the sale of moccasins and gloves made from the tanned deer and cariboo skins, and also from the sale of baskets, which are much sought after by tourists. At some of the reserves robes from the skins of the marmot are made and are sold at good prices. These Indians also put up for winter consumption large quantities of berries of all kinds.

The attendance at the Williams Lake industrial school was fully up to the required standard and I desire to state my approval of the work done by the principal and teachers of that institution.

I have, &c.,

E. BELL,
Indian Agent.

BRITISH COLUMBIA,
INDIAN SUPERINTENDENT'S OFFICE,
VICTORIA, June 15, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report upon Indian affairs in the province of British Columbia for the year ended March 31, 1908. The respective reports and statistical statements received from the different Indian agents, as well as those coming from the principals of the industrial and boarding schools established in this superintendency have been, as they were received, promptly forwarded for the information of the department at Ottawa. Under the different headings formulated by the department for my guidance the following summary of particulars bearing upon the subject in hand may, I trust, meet the requirements by showing in a general way the condition of the Indians during the period reported upon.

Population.—There has been, as shown in the statistical returns, an increase in the number of deaths as compared with births in nearly all the agencies.

Health and Sanitation.—The health of the Indians on the whole has been satisfactory, although, as usually occurs, measles was for a time epidemic in some of the agencies with more or less fatal results. The sanitary conditions continue to improve owing to the instructive attention of the departmental medical officers, the hospital attendants, the Indian agents and missionaries, the natives becoming more capable each year of appreciating the benefits derived from the precautionary measures advocated. Vaccination is also attended to in all cases where it is considered advisable to operate.

Resources and Occupations.—The following recapitulation affords a fairly full account of the different occupations and pursuits followed by the British Columbia Indians; employment at the whaling stations recently established in the west coast of Vancouver island; canning salmon, clams and other fish products on a limited scale; as fishermen and at other employments in connection with the canneries during the fishing season; fur-sealing on their own account, and as hunters on schooners owned by white men ; curing salmon, halibut and other fish-products for sale and for home consumption; catching fish and hunting game in season, which they sell profitably in different cities and towns; building fishing-boats and other craft, as well as canoes for their own use and for sale; manufacturing dog-fish and oulachon oil; farming, gardening and working as farm-hands on the ranches of their white neighbours; stock-raising and employment as cowboys on many of the cattle ranches; logging on their own account and working in saw-mills; employment as trimmers on ships, loading coal, for which they are paid from $3 to $5 a day; loading lumber on ships for export, at which they earn equally high wages; as sectionmen on railways, and labourers on provincial roads; as guides to hunters, miners and others; mining on their own account and for hire; hop-picking, dairying on their own reserves; fruit-culture; poultry-raising; making curios (mostly during the winter season), copied

from ancient native models, for which they find a ready sale to tourists; working as carpenters, and in various capacities, chiefly in new towns springing up all over the province; cutting cordwood for sale to canneries and to steamboat-owners on Crown lands; acting as interpreters; as lighthouse-keepers, and engaging from time to time in all such desultory occupations wherefrom they expect to derive sufficient remuneration to recompense them for their labour. The Indian women, it may be remarked, are also money-earners to no inconsiderable extent. During the canning season and at the hop-fields they find profitable employment, they engage extensively in the manufacture of baskets, which they dispose of profitably to tourists and others; they cure and dress deer and cariboo skins, out of which they make gloves and moccasins; and they frequently find a market for dressed skins intact, they being useful for many purposes; mats from the inner bark of the cedar, and of rags, are also made, some of which are of an attractive and superior quality; they make their own and their children's clothing, being much assisted in the latter by sewing and knitting machines; they also gather large quantities of berries, which in some cases they sell among the white people, a major portion is, however, dried for use; in doing chores and laundry work for their white neighbours they also find remunerative employment.

Buildings.—An improvement in the style of architecture of the houses being built by the Indians is observed, and more attention is being paid to the surroundings and sanitary arrangements.

Stock.—Where the land within the reserves is suitable, a commendable interest is taken in stock-raising. The breed of cattle and horses shows a steady advance, and, owing to the good prices obtained for horses of superior grade, the cayuse or native pony is not cared for as in former years. As the Indians advance, they evince a desire for the comforts that surround a fairly well-to-do white man, and so, in many places, they acquire sheep and pigs which, on account of being easily kept, prove profitable and consequently are highly esteemed. Turkeys, geese, ducks and chickens are also to be seen in the native settlements.

Farm Implements.—The Indians, having to contend against so many competitors in the labour field, owing to the increasing influx of whites and others into the country during late years, find that they cannot make money as easily as they did in former years when disposed to work at odd jobs outside their reserves, and are as a consequence giving more attention to the resources nearer home, such as farming and stock-raising. During the year reported upon I know of many Indians who formerly went to the canneries and other places during summer in search of work, that have now come to the conclusion that they would be much better off and more comfortable by remaining at home and attending to their gardens and stock, &c., a course which for years I and others have endeavoured to persuade them to adopt as being in every way to their advantage both morally and physically.

Education.—Considerable progress is being made in such localities as are provided with schools. The desire on the part of parents of Indian children for the education of their offspring continues to increase each year, and in some places where Indian schools are not available the native children are allowed to attend the provincial public schools where, by their good behaviour, neat appearance, cleanliness and attention to their studies, they give general satisfaction and cause no little surprise. A perusal of the full and interesting reports received from the school inspector and the principals of the industrial and boarding schools throughout this superintendency will fully repay those who are at all interested in such good works.

Native boys who have been so instructed are now engaged in teaching at their native villages and elsewhere, for the most part giving good satisfaction, and proving themselves capable of doing good work; instances of the kind increasing every year, afford remunerative employment not hitherto available.

Stores are in operation at many of the reserves, the clerks being young men who have been educated at one or other of the Indian schools. Young native women trained at these institutions go out to service, and are much sought after as nurse-

maids and general servants, &c., and give great satisfaction to their employers. In their own homes it is noticeable that many of those who have had the advantage of such training seem much more comfortably off, approaching closely the standard regulating the domestic arrangements observable in the houses of respectable white people of the labouring class. In the management of their farms, gardens, and in other industrial occupations, a method and thrift, unknown to the older Indians, in many pleasing instances prevail; the superstitious beliefs as well as many of the old-fashioned customs are, happily, dying out, and in the no distant future I feel assured that the barbarous and degrading customs referred to will have become, to a great extent at all events, but memories of the past. At the present time English is freely spoken by the rising generation, among the aborigines, whose most cherished aspiration is to become 'all the same as a white man.'

The day schools, as has been stated in other reports, are not as successful as it is desired they should be. To any one acquainted with the conditions governing the lives of many of the Indians this is not surprising. In their efforts to obtain the necessary means of support for themselves and families, they are forced at certain seasons of the year to move from place to place, when it is necessary that they take all their belongings with them; in some of these migratory expeditions may be seen in the canoe, men, women, children, dogs, cats, chickens and ducks, &c., all stowed away somewhere. Under these circumstances regular attendance at school is impossible, and, to a great extent, the advantages derived from a few months' teaching are neutralized by a prolonged absence, when most of what has been taught is forgotten. Where the Indians are so situated as to be able to remain at their reserves, and the children have the advantage of regular attendance, &c., the results are fairly good.

Religion.—Religious observances and services are practised with praiseworthy devotion by the members of the different denominations to which they have become converts. Many of these who but a short time since were pagans are now among the most zealous in their worship according to the Christian belief; indeed, the simple, childlike faith exhibited by very many of this primitive people is most amazing, and oftentimes borders on the pathetic, affording an example that might profitably be followed by many of their more civilized fellow Christians of a lighter colour.

Chapels and churches are numerous throughout the different agencies, and even in the most remote places, I find, when engaged in my periodical visitations, the village church, which, in many instances being situated on rising ground, can be seen from a long way off; its appearance together with the faint echoes of the periodically tolling bell having a tendency to produce human and reverential emotions in the breast alike of the white man or the red, no matter how rough or wild may be the surroundings. Owing to the good and effective work of the missionaries, at the present time there are but few pagans among the Indians, over nine-tenths of the whole native population being now registered as members of one or other of the different religious denominations, the missionaries belonging to which, respectively, are doing such good work amongst them.

Character and Progress.—Under this head it is pleasing to be able to report that the native people continue to give evidence of considerable self-reliance and industry. As loggers, farm labourers, stockmen on cattle ranches, packers, sectionmen on railways, guides to hunting parties and others, and as boatmen, &c., &c., they are equal and in some respects superior to men of other races in many of these pursuits, invariably giving good satisfaction to their employers. In some places they turn out with teams and wagons, picks and shovels, and do considerable work on roads in the vicinity of their reserves.

As a rule, they are all good handicraftsmen, and have in different localities constructed substantial bridges across rivers of considerable magnitude, performing such work in a manner worthy of skilled workmen. Incited by their increasing knowledge touching the value of the land upon their reserves, they have

been, and are, erecting miles of good fencing, and, realizing to a great extent that their future support will depend upon the land, are devoting year by year more attention to the working of the ground at their disposal. Where conditions are at all favourable, good crops are raised, carefully harvested and stored; their agricultural machinery and tools are well looked after; their stock provided for and kept in good condition as a rule.

Striking instances are not uncomon illustrating the capabilities of the natives as farmers and stock-raisers. In some cases individual Indians own herds of as fine cattle and horses as can be seen on the majority of ranches worked and owned by white men; others, though not so well off, are striving in that direction, and the demand for more land is increasing as they advance. Many are willing to lease tracts of land for grazing purposes from the provincial government, but find it most difficult to do so. Others are desirous, frequently, of purchasing land on their own account from the government; but, owing to an amendment to the Provincial Land Act passed last session, they are now unable to do so; this they look upon as a great hardship and injustice, as they are quite willing to pay taxes, &c., and claim to be British subjects. There are a few Indians who, possessed of a progressive and independent spirit, have branched out for themselves, leaving their reserves and the Indians, and settling upon pre-emptions which, through the favourable consideration of the lieutenant-governor in council, and upon my strong recommendation, they have been allowed to take up under the British Columbia Land Act. As a rule, these Indians do very well, and by their thrift and energy, &c., afford a wholesome object-lesson to their less energetic and ambitious tribesmen. In many settlements to which reserves are closely situated the Indians are quickly getting into the ways of the white man, and take a lively interest in all such matters as affect the welfare of the community generally.

As is only natural, there are, of course, many whose temperament and environments being less favourable to such advancement, are slow in their approach towards civilization and independence. It is, however, only a matter of time with these people when eventually they will have settled down and taken to one or other of the many industrial occupations followed by their more enlightened white neighbours in their improved efforts to obtain the means of supporting a comfortable existence.

Temperance and Morality.—In these respects it may safely be stated that the majority of the Indians are free from blame, left to themselves, they pursue the simple life, but unfortunately temptations offered by unprincipled white men (their white brothers of many generations of civilization) and others, cause many to give way to the craving for intoxicants common to the aboriginal races all over the world. Taking all things into consideration, the Indians in British Columbia have a most creditable record, judging from the criminal statistics alone, in which returns they appear far ahead of other people as a law-abiding, temperate and inoffensive class. Much credit is due to the Dominion constables appointed for the purpose of aiding the provincial and municipal police in bringing to justice those disreputable characters who make, or attempt to make, a despicable living by selling intoxicants to Indians; many cases have thus been brought into court and examples made which have had a salutary effect in checking the illegitimate trade under consideration.

General Remarks.—The returns from the different agencies for the year reported upon, with the exception of Babine and Williams Lake, show a slight decrease in the population. Among the very young people, in five of the agencies, measles and complications arising therefrom, proved more or less fatal, and generally throughout the superintendency several deaths were caused, chiefly among the old people, from the effects of grippe; consumption also claiming a certain number of victims.

Agricultural returns were on the whole favourable and stock wintered well, no losses to any appreciable extent having been recorded. Game and fur-bearing animals are becoming scarcer each year; many of the skins taken, however, brought good prices, which compensated to some extent for the few taken, and in some localities the bounty paid by the local government of $7.50 on cougar scalps and $2 each on those of

coyotes helped considerably. Notwithstanding that in some of the fishing localities the results were not favourable, it is satisfactory to know that there was a large increase in the general earnings of the Indians and that they were on the whole well provided with the necessaries of life during the winter.

I have, &c.,

A. W. VOWELL,
Indian Superintendent for British Columbia.

BRITISH COLUMBIA.

REPORT OF THE INDIAN RESERVE COMMISSIONER.

INDIAN OFFICE, VICTORIA, April 3, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit for your information a report in connection with the Indian Reserve Commission and the surveys of Indian reserves made during the year ended December 31, 1907.

Mr. Ashdown Green, who has been employed as surveyor to the commission off and on for the past 26 years, resigned his position on June 30, last, and has since been temporarily engaged in the office whenever his services were urgently required. Among other things, he superintended the construction of a dam across the Cowichan river to divert the water from the Indian fields on the reserve, and directed the removal of timber jams, &c., on the Vedder river. In addition to these duties he plotted the field-notes of Mr. Gore's survey of the Hope, Bonaparte, Cook's Ferry and Chilliwack reserves, and prepared tracings of the plans for the department, the agent and the chiefs.

Owing to the high fees demanded by surveyors and the increased cost of wages, transport and provisions, the only surveys undertaken were those within the railway belt at Hope, Chilliwack, Cook's Ferry and Bonaparte, which more than consumed the funds available for that service. These were surveyed by Mr. Thomas Gore, D.L.S., and the notes have, as already stated, been plotted, and the field-notes sent to the department.

On June 15 last, accompanied by Mr. Green, I proceeded to Kitimat (as reported in my letter of July 23, No. 737-8) where I was joined by Agent Morrow. Here four additional reserves were defined which include the sites of two old villages, some garden patches and a fishing and hunting station.

Inclosed I forward a list showing the work yet to be done in connection with the Indian Reserve Commission and surveys in British Columbia. In view of the statement of the Chief Commissioner of Lands and Works that 'Owing to the unsatisfactory state of affairs between the Dominion and the Province in relation to the question of Indian Reserves, the Executive considers it inadvisable in the meantime to make further allotments, but will be prepared to consider any application by the Department for purchase, or deal with suitable exchanges,' the work of the Reserve Commission apparently must remain in abeyance until these questions are settled; the surveys, however, with the exception of those at Kitimat, which have not been approved by the Chief Commissioner, can be proceeded with at once when funds are available.

I have, &c.,
A. W. VOWELL,
I. R. Commr., B.C.

LIST SHOWING WORK YET TO BE DONE IN CONNECTION WITH THE INDIAN RESERVE COMMISSION AND SURVEYS IN BRITISH COLUMBIA.

Additional reserves required for bands whose present allotments are represented not to be sufficient for their requirements.

Queen Charlotte Islands, additional land at Slate Creek.

Kitwangar, additional land asked for at Andemaul.

Kispiax, additional fishing station asked for.

Nitinat, additional fishing station at Vargas Island asked for.

Fountain, Pavilion, Lillooet, Ashcroft, Bonaparte, Deadman's Creek, Clinton, addiland at Rhrebeum Lake for fishing and grazing purposes, asked for.

Douglas Portage, village site and fishery asked for.

Babine, additional fishery asked for at Copper river.

Kincolith reserve at Dogfish bay, Portland canal; in lieu of that cut off by U. S. boundary.

BANDS FOR WHICH NO RESERVES HAVE HITHERTO BEEN MADE.

Anaham Lake. No reserves allotted to this band.

Ootsa Lake. No reserves allotted to the Indians in this district.

Kitwancool. No reserves allotted to this band, the Indians having refused to give any information as to what they require or to have any land laid off for them.

RESERVES, &C., TO BE SURVEYED.

Redstone Flat.

Nazco River.

Bella Coola. Roads on subdivision to be widened.

Metlakatla. Grant to G. T. P. Railway to be surveyed.

Babine. Lands given in exchange for fishery rights.

Birnie Island. One acre to be surveyed for lighthouse purposes.

Cape Mudge. To be subdivided.

Hartley Bay. Townsite to be surveyed.

Kitimat. Four reserves defined but not approved of by the Chief Commissioner.

Yale. Nine reserves within the railway belt to be surveyed, viz: Nos. 17, 18, 19, 20, 21, 22, 23, 24 and 25.

A. W. VOWELL,
I. R. C.

REPORT OF THE CHIEF MEDICAL OFFICER.

DEPARTMENT OF INDIAN AFFAIRS,
OTTAWA, JULY 1, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,

SIR,—I beg to present the fourth annual report of the Chief Medical Officer, being for the fiscal year 1907-8. The medical service of the Indian bands has been extended to those in treaty, and certain other bands outside of treaty have incidentally received medical advantages. The total population of the 375 bands for the year is estimated at 109,394, under the supervision of 93 agents and 186 medical officers.

The year has not been marked by any outbreaks of disease of a wide-spread or epidemic character, but small-pox, diphtheria and measles, the latter in particular, have appeared in several bands, though causing no notable mortality. The reports of the several agents and inspectors, as well as physicians, incidentally refer now and then to difficulties, owing to the location of bands, regarding a regular and frequent medical service.

In my report for 1905 the following remarks were made in connection with mortality tables:—'And yet some of these death-rates are so great, so abnormal, in bands situated on the best of soils, in the most favoured climate, that we are forced to examine closely and try to obtain for ourselves a true clinical picture of the situation as it exists.....It is primarily a difference in moral development with its accompanying lagging behind in material advancement, both of which are chief factors in determining the health of any people. If the health of the Chippewas of Saugeen be compared with that of the Sarnia band, the truth of these remarks will be apparent. Away from deteriorating influences the band prospers and has maintained physically a high degree of health.'

Observation of the bands since that report, or during the past three years, has only served to confirm the truth of the statement then made, so that it may be said that apart from the accident of some epidemic outbreak, the general death-rate of a band becomes a very close measure of its moral and material status. This has been evidenced by the relative readiness with which different bands have seconded any efforts made to deal with tuberculosis on their reserves. Some have shown an exemplary desire to assist in any way possible to lessen the prevalence of this so fatal disease, while others of the less advanced bands have been slow to second the efforts of medical officers to have their sick taken from houses and treated in our local hospitals or sanatoria. It is very gratifying, however, to be able to report a real anxiety on the part of the bands of older Canada to have, if possible, the death-rate amongst them from this too-prevalent disease lessened, and that they show in discussing the matter with them a quite remarkable knowledge of the problems involved and the difficulties to be encountered.

Of the outbreaks of acute contagious disease during the year, that of small-pox in the Onion Lake agency was the most important. The disease was reported present at Onion Lake by telegram dated October 28. No history of the source of the outbreak has been supplied the department, except that in a letter dated January 2, it is stated that a number of half-breed families had been quarantined. The disease, however it was started, developed rapidly, for in December the acting agent reported several cases at Long Lake and at Cold Lake, and also several families were reported to have the disease at Moose Lake. The first comprehensive report dealing with the outbreak is that of Dr. Amos, under date of January 21, after a personal visit made to the district. Summed up, there were 9 cases at Moose Lake, 19 cases at Long Lake and

7 cases at Cold Lake, while several additional cases occurred amongst the Indians located at the agency headquarters at Onion Lake, one of these being the Indian interpreter. In addition to the families where the disease occurred, a large number of other families were quarantined, so that in all over one hundred Indians were directly affected as the result of the outbreak. A report dated March 25 states that the epidemic had then been stamped out. Although a number of the cases, some 20 in all, were reported to have been severe, no deaths occurred. The difficulty in this case seems to have in a large degree resulted from a lack of thoroughness in recent routine vaccination amongst the several bands of the agency. Cases of small-pox, two in number, occurred in April, on the Six Nation reserve, due to the outbreak amongst the Indians in Delaware township, but the disease was quickly stamped out. A case of unknown origin, probably resulting from some hidden source of infection, due to the outbreak on this reserve during the previous winter, occurred in May on the Walpole reserve, but no other cases resulted. A quite serious outbreak of diphtheria occurred amongst the Indians of the Norway House agency on Lake Winnipeg, necessitating the sending of a special medical officer to give all his time to the suppression of the epidemic. No deaths were reported.

The reports from the different agencies on the upper British Columbia coast state that measles with the usual fatal results from bronchitis was prevalent during the year.

The returns made on the monthly medical report forms show much the same number of diseases and of the same character as were reported in the two previous years. The following table gives the number and nature of these diseases:—

TABLE OF DISEASES, 1907–1908.

General Diseases.	Months.												
	1907.									1908.			
	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
I.—Communicable (epidemic) diseases—													
1. Typhoid fever	4	0	2	7	4	7	3	1	0	0	2	1	31
2. Small-pox	5	2	0	5	2	4	12	0	2	17	1	6	56
3. Measles	10	4	8	2	0	4	0	1	6	14	11	9	69
4. Scarlet fever	1	6	0	2	1	0	1	4	2	11	8	4	34
5. Whooping-cough	7	2	4	3	0	0	1	6	5	9	11	7	55
6. Diphtheria and croup	2	1	1	0	0	3	6	2	9	11	9	15	59
7. Influenza	18	11	4	7	0	2	5	9	14	23	13	17	123
8. Other epidemic diseases	5	11	8	4	4	13	7	4	8	10	3	9	86
													513
II.—Other general diseases—													
1. Pyæmia and septicæmia	11	8	6	11	10	16	14	11	19	14	11	21	152
2. Malarial fever	7	19	17	22	29	32	14	11	0	0	0	0	151
3. Tuberculosis and scrofula T	143	159	127	121	148	164	192	188	190	167	171	179	1,949
3. Tuberculosis and scrofula S	101	109	93	87	111	109	99	119	121	101	97	113	1,260
4. Syphilis	18	13	21	27	19	14	24	18	15	22	22	19	232
5. Cancer	4	2	0	6	2	4	1	0	2	2	4	1	27
6. Rheumatism and gout	186	174	144	191	161	127	181	167	162	156	187	169	2,005
7. Diabetes	4	1	2	0	0	1	2	0	3	3	1	0	17
8. Other general diseases	80	91	97	69	91	83	78	61	78	80	93	84	985
9. Alcoholism acute and chronic	2	5	0	3	9	4	7	7	4	1	5	7	54
													6,832

TABLE OF DISEASES, 1907-1908—*Continued.*

General Diseases.	Months. 1907. April.	May.	June.	July.	August.	September.	October.	November.	December.	1908. January.	February.	March.	Total.
Local Diseases.													
III.—Diseases of nervous system and organs of sense—													
1. Encephalitis	0	0	1	0	2	0	0	1	0	0	0	1	5
2. Simple meningitis	2	1	0	4	4	2	1	2	3	0	5	7	31
3. Epidemic cerebro-spinal meningitis	1	0	1	1	0	0	2	1	0	1	0	2	9
4. Congestion and hæmorrhage of the brain	0	0	1	0	0	2	0	1	1	0	1	0	6
5. Softening of the brain	1	1	0	0	1	0	1	1	0	2	1	0	8
6. Paralysis without specified cause	2	0	1	2	1	1	0	0	1	1	0	1	10
7. Insanity	4	2	0	2	3	0	4	1	2	0	1	3	22
8. Epilepsy	8	4	2	1	7	9	0	3	11	4	0	8	57
9. Convulsions (not puerperal)	2	0	2	4	1	7	4	1	3	0	5	3	32
10. Toothache	71	68	104	93	97	109	105	91	69	77	107	104	1,095
11. Other nervous diseases	4	2	6	4	9	5	5	11	4	7	9	5	71
													1,346
IV.—Diseases of circulatory system—													
1. Pericarditis	2	0	1	1	2	0	6	1	4	2	1	7	27
2. Endocarditis	1	1	3	0	7	4	1	5	1	1	2	6	32
3. Organic heart diseases	120	105	91	115	113	99	107	87	91	117	99	109	1,253
4. Angina pectoris	1	0	1	1	0	0	0	0	1	0	1	0	5
5. Diseases of the arteries, atheroma aneurism, &c	5	1	3	0	1	1	3	7	1	2	0	4	28
6. Other diseases of the circulatory	7	4	2	5	4	10	2	4	7	7	2	6	60
													1,405
V.—Diseases of respiratory system—													
1. Acute bronchitis	111	93	102	87	81	97	100	113	101	99	119	104	1,207
2. Chronic bronchitis	73	67	69	81	86	91	102	87	94	91	101	107	1,049
3. Broncho-pneumonia	28	19	13	11	7	4	9	17	21	27	33	41	230
4. Pneumonia	21	17	9	4	6	8	17	28	39	42	37	40	268
5. Pleurisy	19	12	14	7	5	10	19	23	31	39	43	46	268
6. Congestion of the lungs (including pulmonary apoplexy)	2	1	0	0	1	0	0	0	3	0	3	1	11
7. Asthma and emphysema	0	0	4	7	3	1	0	0	0	0	0	0	15
8. Other diseases of the respiratory system	13	9	5	5	7	12	8	4	10	6	6	9	94
													3,142
VI.—Diseases of the digestive system—													
1. Ulcer of the stomach	1	0	0	2	0	1	1	0	1	0	0	2	8
2. Other diseases of the stomach (cancer excepted)	161	149	147	153	137	159	160	143	148	157	162	141	1,817
3. Infantile diarrhœa and gastroenteritis (cholera infantum)	18	23	38	43	41	30	27	18	15	11	19	10	293
4. Diarrhœa and enteritis (not infantile)	13	27	31	39	46	37	23	17	11	9	7	13	263
5. Dysentery	14	11	17	21	28	24	19	15	15	9	11	11	195
6. *Hernia and intestinal obstructions	6	4	9	13	11	8	4	13	9	5	8	7	97
7. Other diseases of the intestines	126	143	139	176	198	143	99	113	157	191	183	131	1,799
8. Diseases of the liver	5	5	9	6	11	8	13	9	5	11	6	9	97
9. Peritonitis (not puerperal)	2	1	3	3	0	1	3	1	0	1	1	3	19
10. Iliac abscess (typhlitis, perityphlitis, appendicitis)	6	3	0	1	1	3	5	0	0	4	1	2	26
*Mainly constipation.													4,614

DISEASES BY PROVINCES, 1907–1908.—*Continued.*

General Diseases.	Months. 1907. April.	May.	June.	July.	August.	September.	October.	November.	December.	1908. January.	February.	March.	Totals.
VII.—Diseases of the genito-urinary system—													
1. Acute nephritis	1	0	0	2	2	1	0	1	0	2	1	1	11
2. Bright's disease	7	5	2	8	3	6	6	4	7	2	4	9	63
3. Other diseases of the kidneys and Adnexa	3	6	7	5	4	4	2	0	3	1	4	0	39
4. Vesical calculi													
5. Diseases of the bladder	5	11	6	15	9	11	9	4	7	5	4	4	90
6. Diseases of the male genital organs	20	12	5	36	20	25	23	21	26	22	28	31	269
7. Metritis	8	10	17	13	21	17	28	32	37	24	29	32	268
8. Other diseases of the uterus	12	9	11	19	9	11	17	12	15	11	20	17	163
9. Ovarian cysts and other ovarian tumours	8	14	11	19	11	8	13	13	9	7	15	10	138
10. Other diseases of the female genital organs	27	19	23	13	17	17	25	19	23	11	18	13	225
													1266
VIII.—Puerperal diseases—													
1. Puerperal septicemia	19	13	21	15	11	23	17	14	14	21	17	11	196
2. Puerperal albuminuria and convulsions	2	1	2	0	0	1	3	1	1	0	0	2	13
3. Other accidents of pregnancy, sudden death	0	2	2	1	0	1	3	0	4	2	2	3	20
4. Puerperal disease of the breast	4	4	2	1	6	3	5	7	2	5	0	3	42
5. Other puerperal	37	43	34	63	56	52	49	52	56	47	51	55	595
													866
IX.—Diseases of the skin and cellular tissue—													
1. Erysipelas	12	16	11	19	11	13	13	16	14	18	13	15	171
2. Eczema	50	47	56	48	61	49	54	69	67	55	49	52	657
3. Other diseases of the skin and its adnexa (cancer excepted)	9	13	11	17	21	15	17	12	15	18	17	13	178
													1006
X.—Diseases of the locomotor system—													
1. Pott's disease	2	0	0	0	1	0	0	3	1	0	1	1	9
2. Diseases of bones and joints	1	0	0	3	0	1	0	0	1	0	2	0	8
3. Amputation (for unspecified disease)	2	0	1	0	0	0	0	1	0	2	0	0	6
													23
XI.—Malformations, diseases of infancy, diseases of old age—													
1. Still-births	1	0	2	1	0	0	1	0	1	1	2	0	9
2. Congenital debility and malformations	3	0	1	2	1	0	3	1	1	0	1	0	13
3. Other diseases of infancy	17	13	21	15	19	26	29	22	31	18	26	26	263
4. Senile decay	4	2	2	1	3	7	5	1	3	6	4	5	43
													328

TABLE OF DISEASES, 1907–1908—*Concluded.*

General Diseases.	Months.												
	1907.									1908.			
	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
XII.—Injury—													
1. Fracture and dislocations	11	7	3	8	3	5	10	5	7	4	9	7	79
2. Gunshot	13	6	3	3	5	8	8	11	13	10	7	9	96
3. Lightning	0	0	1	0	0	0	0	0	0	0	0	0	1
4. Drowning	7	3	5	8	7	5	5	3	0	0	0	1	44
5. Electric cars													
6. Bicycles													
7. Railways	1	0	0	0	2	0	0	0	0	0	0	0	3
8. Burns and scalds	7	5	2	0	3	1	5	9	9	5	3	6	55
9. Homicide	2	0	0	0	1	0	0	0	0	0	1	0	4
10. Other accidents	5	9	2	0	9	1	5	9	3	0	2	4	49
													331
XIII.—Ill-defined causes—													
1. Dropsy	2	1	4	0	2	1	0	0	1	2	1	0	14
2. Tumours	8	5	2	7	4	3	3	0	5	7	4	7	55
3. Other ill-defined Causes	31	31	19	15	23	29	25	32	19	23	27	19	293
													362
XIV.—Eyes—													
1. Corneal ulcer	22	18	22	24	22	18	11	16	21	9	13	21	217
2. Conjunctivitis	37	39	42	31	28	30	42	28	37	40	41	34	429
3. Pterygium	50	31	27	21	19	22	49	31	25	29	33	27	364
													1010
													23044

In all 23,044 cases of disease are reported to have been treated by physicians, but it is probable that cases are reported from month to month as being treated which represent returned cases. There were in all 513 cases of communicable epidemic disease reported. A total of 56 cases of small-pox, 69 of measles, 34 of scarlet fever, 59 of diphtheria, 55 of whooping-cough, 31 of typhoid fever, 123 of influenza and 86 of other epidemic diseases made up this class. Except for influenza, with 123 cases, this class of disease shows less prevalence than during the previous year.

Class II, which deals with general non-epidemic constitutional diseases, is as amongst other classes of people most prevalent both as regards cases and deaths. Neither pyæmia nor malarial diseases varied much from the previous year, but tuberculosis and scrofula, a form of tuberculosis, are reported as prevailing to a perhaps slightly less degree than in the preceding year. The total of these two diseases reported is 2,209 as compared wit' 2,697 in 1907. This would seem to indicate a decline in the prevalence of this disease, but the mortality tables and reports from everywhere still show the disease to be the principal cause of death amongst our Indian bands. The other most prevalent disease in the group is rheumatism and gout, of which 2,005 cases are reported as compared with 1,294 last year. Some 54 cases of alcoholism, also, are reported as compared with 10 in the previous year.

Under Class III are included diseases of the nervous system and special senses. Under the latter is placed toothache, which seems to have been especially prevalent,

but apart from this disease the paucity of diseases of the nervous system is quite remarkable. The asylums of the country further illustrate the practical absence of insanity among the Indian population. Much the same remark may be made regarding diseases of the circulartory system, Class IV, there being in all but 1,253 cases of heart disease and allied ailments. These two facts serve to show that native populations, where the stress of business competition is largely absent, have the advantage at any rate of an immunity from a class of diseases which especially marks the high tension of modern life.

Class V includes diseases of the respiratory systsm, and as in previous years, a long list is given of diseases which, like bronchitis, pneumonia and pleurisy, are so closely associated with tubercular disease. Were it possible to have an accurate diagnosis of many of these cases, it would doubtless be shown that they are but the first stage of consumption.

Class VI, diseases of the digestive organs, shows a total of cases reported of 4,614, which serves to illustrate how the crude habits of many of these people with regard to both the preservation and preparation of their food result in a very high degree of prevalence of digestive troubles.

In Classes VII and VIII it will be noticed that as regard diseases of the genito-urinary system and puerperal diseases the table shows a quite remarkable freedom, there being but 1,266 cases of the former and 866 cases of the latter. The same may be said of diseases of the skin, under Class IX, and of diseases of the locomotor system in Class X. Under Class XII are included injuries, and these gun-shot wounds were the greatest in number. It is noteworthy of remark that 44 cases of drowning are reported, but if to this number the victims of the Quebec bridge disaster be added, some 35 in all, it would appear that this cause of death is disproportionately large in the Indian bands. Under Class XIV, including eye diseases, 1,010 cases are reported. While the number is not large, it might still be reduced, since a number of these cases are doubtless repeated in the monthly medical returns; they illustrate, however, the fact that diseases of the eye, especially among the older Indians, exposed to the smoke of the camp fire, prevail quite generally, and as chronic conjunctivitis or trachoma, result in blindness not infrequently.

While, as already mentioned, the returns from the different bands are much the same as last year, it may be stated that reports from British Columbia are very defective. The reason for this is understood when it is remembered that the reservations in this province are small but numerous, consisting of favourite fishing and hunting grounds distributed along the inlets of the sea coasts and streams in the valleys of the mountains, often many miles distant from a medical officer who, perforce, can make only occasional visits.

These remarks regarding special outbreaks of the acute infectious diseases, and on the statistical tables of monthly returns, constitute what may be called the routine features of medical health work amongst the Indians during the year.

But the continued high death-rates compel our attention to the continued existence of conditions which are preventing that progress in population and material and social well-being which is so much to be desired. The monthly reports of medical officers as already referred to indicate a remarkable freedom from diseases other than of the digestive and respiratory tracts; but as it is by these two pathways that the endemic parasitic germs of tuberculosis find their entrance to the body, it is plain that we must guard these avenues of infection in reality if we wish to notably lessen the mortality from tuberculosis. Regarding the former of these, medical science now recognizes that it is digestive troubles due to improper food in infancy that not only cause may deaths from diarrhœal diseases, but which also prepare through these inflamed tracts the tissues for the reception of the bacillus of tubercle, whether as actually tuberculous meat or milk, or from infected house filth and dust actually getting into the food through hands, dishes, &c. The recently published report of

the Royal Commission on Tuberculosis in England points out—'That of the total 60 cases investigated by us, 28 possessed clinical histories indicating that in them the bacillus was introduced through the alimentary canal.'

While the commissioners' report further points out as a demonstrated fact that the type of the disease germ varies in its virulence and that in the cases where the involvement of the cervical glands, (the form peculiarly prevalent amongst the Indian people), was especially studied, the type was not commonly so virulent as where the disease especially involved the abdominal organs, yet the virulent type was found in at least one-third of the cases examined.

What proportion of cases of tuberculosis are brought about through the medium of the digestive tract as compared with the respiratory still forms the basis of much scientific discussion, but it is sufficient for us to know that the house conditions on most of the reserves are such as to make infection certain by one or both ways. In a remarkable paper recently presented before the National Association for the Study and Prevention of Tuberculosis at Washington, D.C., by Dr. Jas. R. Walker, resident physician to the U. S. Pine Ridge agency in South Dakota for many years, the exact situation with regard to tuberculosis amongst Indian bands is so clearly set forth that I cannot do better than extract a few sentences contained therein. The population of this band of full-blooded Sioux was 4,870, regarding whom exact sanitary and vital statistics were kept for ten years. The paper states:—

'Tuberculosis among these Indians does not differ in any respect from tuberculosis amongst white people. The infecting material is the same and is produced and disseminated in the same way; individuals are affected in the same manner and the disease runs the same course, produces the same results and is subject to the same measures, remedial or preventive as it is among the white people. It does not show any especial affinity for the Indian nor affect him under any condition in which it would not affect a white man. There is no inherent peculiarity which renders him more liable to infection from tuberculosis than is a white man under like circumstances.' After indicating the size of children, their growth and size at maturity, the paper states—'That in person the Indian is as well adapted to fulfil the requirements of a healthy life as is the white. Yet a much larger proportion of these Indians than of the white people are infected with tuberculosis. This must be the result of external conditions that do not especially pertain to the Indian.....Tuberculosis existed among these Indians before they came into contact with the white people, but at that time the disease was rare among them and remained so until they changed their nomadic to a settled life in houses. When they began to live in houses, tuberculosis began to increase among them, so that the conditions that caused this increase must have been different from those surrounding them when they lived in tepees. They were filthy, both when they lived in tepees and when they lived in houses. It was statistically demonstrated that those who were the most cleanly were the less susceptible to infection by any disease than those who were the most filthy, and conversely, that the most filthy were the most susceptible to infection of every kind. But there is no evidence that this filth ever caused tuberculosis except when it was mingled with the specific germs of the disease.'

'When they began to live in houses, the government supplied them with an abundance of food and in a much greater variety than they had been accustomed to. It also supplied them with cooking stoves and utensils, so that their food was better cooked than when they lived in tepees. Coincident with this increase of food prepared and taken in a more sanitary way was the increase of tuberculosis amongst them.'

'During their savage life the clothing of these Indians was of skins fashioned after a primitive style. They never laundered them or changed them for purposes of cleanliness. At this time they were often subjected to inclement weather with insufficient clothing and often slept with insufficient covering to keep them warm. .....But the evils of poor clothing, hardship and exposure were offset by the

invigorating effects of their outdoor life, and they were less vulnerable to infection of every nature than they were afterwards,.....

'When these Indians were gathered on a reservation the government's policy was to get them settled in fixed homes, and they were urged to build houses. But no plans for building or instructions as to the sanitary requirements of a house were supplied them. They built their houses small and low, with tight dirt roof and the ground for a floor, with every crack or crevice stopped with daubings for the purpose of preventing ventilation.'

'A heating and a cooking stove were provided for each house. In cool weather these were both fired at once and the Indians would crowd into these superheated cabins and swelter there. If the door of the place was opened on a cold day, the exhalations of the inmates would condense in a cloud that was stifling to one unaccustomed to such air. Such conditions of life were debilitating and lowered the resistance to morbific agencies of every kind. They threw their slops about the door as they did when living in tepees, but they could not move away from them and their surroundings soon became noisome with filth. They would make prolonged visits, two or more families crowding into rooms not large enough for one, and thus pollute the surroundings at double the rate.'

So completely does this description tell the whole story of the passing of the Indian from the nomadic to settled habits of life, under the conditions indicated and with results as set forth, whether in Canada or the United States, that we need only now to deal with some of the results of Dr. Walker's endeavours to lessen the prevalence of tuberculosis in this large band. He states that in 1896 of 4,983 Oglalas, 741 were tuberculous, of whom 120 died in that year; that is 148·7 per 1,000 were diseased and the death-rate was 24·8 from this cause alone. Acting along the lines of prevention based upon the assumption that tuberculosis is an infectious disease caused by specific material, Dr. Walker used every possible means to impress the Indians with this fact, and amongst the first steps he took was to get the infected Indians out of their houses and into their tepees again or into tents, and, his second step to prevent so far as possible the sick from mingling with the unaffected, and to collect carefully the sputa and destroy them. He says:—'At the first the authorities gave hearty support to the work and the co-operation of the Indians was secured beyond expectation, so that the work was made effective according to the plan much more rapidly than had been foreseen.'

'Tuberculosis was steadily and continuously reduced among these Indians for five years from the time the work was begun, when the proportion of tuberculosis was found to be reduced from 148·7 to 105·4 per 1,000, and the annual number of deaths from this disease from 24·8 to 13·45 per 1,000; that is, tuberculosis was reduced nearly one-third and the death-rate from it nearly one-half.

Dr. Walker further remarks that there would have been a much greater reduction had the Indians been so situated that better supervision could have been given them, but they were scattered over an area as large as the State of Connecticut and it was impossible for one physician to give to all the personal supervision necessary to keep them from lapsing from the sanitary work required of them to produce the best results. He further points out the unfortunate results of the physician who had charge of the work being deprived of the opportunity of giving it his personal supervision with the result that the disease somewhat increased in the second five year period; he ends the paper by stating:—'A practical method for suppressing tuberculosis amongst these Indians would be by the establishment of a sanitary camp where all who are affected with the disease should be collected and maintained under competent supervision until each case terminates.'

During the past year hospitals have been in operation at Morley on the Stony reserve, at Waywayseecappo's reserve in the Birtle agency, at Saddle Lake, on the Saskatchewan, at Touchwood Hills and at File Hills. The procedure in these

hospitals is a simple one, the service consisting of a local nurse, generally with a servant to assist her in household duties, in charge of a tent hospital, with a small wooden building alongside for administrative purposes. That at Waywayseecappo, for instance, consists of a log cottage and three tents, double-walled, which have comfortably housed patients during the rigours of the last two winters. In addition to a small garden, cared for by the lady superintendent, and her sick patients, two cows are kept, a pony and such conveniences as a well, an ice-house, &c., have been supplied.

The results obtained can scarcely be overestimated. In a special report from the Birtle Indian agent, supplemented by a report from Dr. Wright, medical officer in charge, are summarized the operations of the hospital from November 1, 1906, to October 31, 1907. Briefly it is therein stated:—

Total treated under 4 years (0-4), 15.
" " " —tuberculized, 6; 2 died; 4 recovered.
Total treated between 5 and 9 years, 4.
" " " tuberculized, 3; 2 died; 1 recovered.
Total treated between 10 and 14 years, 6.
" " " —tuberculized, 2; —; 2 recovered.
Total treated between 15 and 19 years, 4.
" " " —tuberculized, 2; 2 recovered.
Total treated between 20 and 29 years, 12.
" " " —tuberculized, 3; 1 died; 2 recovered.
Total treated between 30 and 39 years, 16.
" " " —tuberculized, 1; —; 1 recovered.
Total treated over 40 years, 30.
" " " —tuberculized, 1; —; 1 improving.

Thus it will be seen that of a total of 173 in the band, 18 were tuberculized and came under treatment, or over 10 per cent of the whole, of whom 4 died or 23 per 1,000 in a total death-rate of 40 per 1,000. That the death-rate was not higher was directly due to the fact that 6 children of the band were sent from the Birtle school to the hospital and were treated successfully, while of the other 12 tuberculized, sent to the hospital, 11 were operated on successfully, while 3 others recovered without operation. The monthly reports from this tent hospital state incidentally the difficulties experienced by the officers in getting all the patients from the several bands of this agency to go to the hospital for treatment; but the cordial co-operation between the agent, medical officer and nurse has resulted so favourably that the agent in his report above referred to states: 'I am pleased with the success of our hospital, as at first I was under the impression that it would be a failure on account of the distance from the medical officer and the agency. Dr. Wright, however, was fortunate in securing the services of Nurse Johnston, who is very capable and is in sympathy with the Indians and is not easily discouraged nor afraid to stay alone on the reserve. A capable nurse who is in sympathy with the Indians can do a great deal of good on a reserve in teaching, especially the women, habits of cleanliness and keeping their houses clean and well ventilated. I trust that the department will not let the work drop even if the patients are few, as on most reserves there are always numbers of very old people who practically get very little sympathy and care from their relations and friends. Dr. Wright deserves to be commended for his strict attention to the work, which has been very successful, especially his operations on scrofulous cases. Consumptives are now admitted to the hospital; at the present time there are 2 from the Bird Tail Sioux reserve, both are doing as well as can be expected. I am pleased to tell you that all the scrofulous cases in this agency have been operated on and all cured.'

It may be stated that in five of the larger bands of western Ontario recently visited by me, I found from exact figures given me by the medical officers that in

four out of five of these bands the deaths from tuberculosis amounted to 15 in 1,000, or as in the case of the Six Nations with 4,236 population and 30 deaths per 1,000, one-half were from consumption. These bands are amongst the most progressive in Canada, so that if this is the state of affairs in them with their relatively good houses, we can understand what it must be where the death-rate mounts up to in some bands from 60 to 70 in the 1,000. As all agree who have studied the subject as Dr. Walker of the Pine Ridge United States agency has, there is but one method of improving the situation and that is, as he pointed out in his paper before referred to, the removal of infected cases, as is being done in Birtle and elsewhere, from the houses and a steady inculcation and education of the householders in habits which mean improved cooking, increased cleanliness and, above all, continued disinfection of houses and the supplying them, through ventilation, with an abundance of fresh air throughout the winter months. The process is simple, but its execution is difficult, requiring a large number of workers of the proper training and spirit and adequate funds to carry on the work.

I trust that it may be found possible to follow the work now so generally being taken up by state and municipal authorities and extend the work already so successfully initiated.

I have, &c.,

PETER H. BRYCE,

Chief Medical Officer.

REPORTS OF PRINCIPALS

OF

BOARDING AND INDUSTRIAL SCHOOLS

PROVINCE OF ONTARIO,
ALBANY MISSION R. C. BOARDING SCHOOL,
ALBANY, JAMES BAY, VIA MCDOUGALL CHUTE, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—To comply with the request made in a circular issued by the department on March 5, 1907, I beg leave to transmit to you the following report.

Location.—Our school is situated on Albany island about 4 acres east of the Hudson's Bay Company's post, and 4 or 5 miles from the James bay coast. No reserve has yet been located for the Albany tribe.

Land.—The ground on which this school has been erected belongs to the Hudson's Bay Company, from which it has been leased for a nominal rent, by the Roman Catholic Mission.

Buildings.—The school building, and the other buildings connected with it, are the Roman Catholic Mission's property.

Accommodation.—There is room for 32 children and for a staff composed of 5 or 6 members.

Attendance.—Being a boarding school, the attendance is perfect, cases of sickness excepted. Very seldom does a child leave the school before the scholastic year is closed.

Class-room Work.—Pupils of the first year schooling are taught reading, writing and arithmetic. Those of the following years learn, besides the aboved named, geography and grammer.

Farm and Garden.—Farming is not practicable in this country, for the reason that the climate is not suitable.

Industries Taught.—Although not an industrial school, the girls are taught cooking, washing, sewing and the mending of clothes.

Moral and Religious Training.—One hour is devoted each day to moral and Christian teaching. Moreover, between class hours each pupil is required to write in a copy-book, in his own language, the explanation of the moral and religious principles given in the preceding class. In the first place, this practice has the good effect of drawing the pupil's attention to what is said in class, knowing that he will have to note it down. Secondly, after the pupil has left school, he makes a good use of his note-book in teaching his brothers, sisters and even his own parents.

Health and Sanitation.—The health of the pupils, as a rule, is very good, although, occasionally, there are some cases of sickness amongst them. Consumption and scrufula are the two prevalent diseases. Some have been affected by scurvy. The cause may be found in the sudden change from their former way of living. Before coming to school, the rule of their lives was to have no rule, sometimes starving, sometimes overeating, always enjoying as much liberty as the birds of the forest. Confinement and a regular manner of living, seems to be a heavy burden on their frail constitution. Another cause may be the diet. It is impossible to feed them on fresh fish and fresh meat all the time. Nowadays, the hunters themselves, living in the bush, rely almost entirely on flour for their living, so scarce has the game become in the country, especially during the long winter season. The house in which the pupils live is a three-storey building, basement included, measuring 65 x 35 feet There is plenty of light, and fresh air is abundant. In the school-room and dormitory, ventilators are in good working order.

Water Supply.—Fresh water is supplied from the river, and carried into the house in buckets. A hand pump was secured some years ago, but it has not been put to work yet, owing to the fact of the spring ice breaking up, which, we fear, would unearth the pipes, and spoil our work.

Fire Protection.—Two ladders, one placed at each end of the building, are fixed to the walls from the upper storey and run down on to a porch.

Heating and Lighting.—Seven stoves, the cooking stove included, are used in heating the building. Light is obtained from coal-oil lamps and candles. Gas and electricity are unknown in this country.

Recreation.—The girls are allowed outside, once each day, for half an hour or more. They spend the rest of their recreation in sewing, cooking or in some other manual labour. The boys go outside four times a day. The morning and noon recreations are spent in carrying wood and water, or in sawing fire-wood. After the morning and evening class, they spend their recreation in playing football, of which they are very fond. On Thursday afternoons there is no class; they have a four or five mile walk in winter, while during the open water season, they do some canoeing, which is quite a treat to them. Some form of manual labour is given the pupils each day; this is done in order to bring them up in the habits of industry.

General Remarks.—I beg you to understand that it is impossible to transmit the quarterly returns with any regularity, owing to the fact that there is no mail service supported by the government in this country. Our mail is carried by the Hudson's Bay Company, but in a limited and irregular way. For instance, your circular, dated March 5, 1907, came to hand only in September last. As for the annual report, we must send it either by the January or the June packet, as there is none in March.

A financial statement, as requested, is hardly practicable. Although the department is giving a substantial grant to the support of the school, for which we are very grateful, the greater part of the expenses are paid by voluntary offerings. I beg leave to say that not a cent of wages is paid, except a few dollars to wood-choppers. Four sisters receive nothing but their board; a lay brother is baking free of charge. another is cutting and drawing fire-wood in the same liberal way. The principal himself, although giving each day, to the pupils a class in moral and religious instruction, besides superintending the good working of the classes and the good behaviour of the pupils, receives no salary. It would be difficult to give an accurate statement of the expenses borne by the school, because, for the sake of economy, we have but one mess for both the staff of the Mission and the staff of the school, together with the pupils, and the inmates of the hospital.

Expecting that you will be satisfied with this explanation, and with this whole report as well,

I have, &c.,

F. X. FAFARD, O.M.I.,
Principal.

PROVINCE OF ONTARIO,
CHAPLEAU BOARDING SCHOOL,
CHAPLEAU, April 10, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to make the following report regarding the boarding school here for the fiscal year ended March 31, 1908.

Location.—Our school is nicely situated on the north side of Chapleau river, just north of the survey line, being about ¾ of a mile distant from the town of Chapleau; and is not on a reserve.

Land.—We are simply occupying the ten acre claim granted by the government. The land is mostly cleared, the stumps remaining. The soil is mostly light and sandy, but adapted to potato-growing.

Buildings.—There is the large main two-storeyed school building, to which has been added this winter a back kitchen, 20 x 20 feet. A frame stable, 40 x 22 feet, has also been erected during the past year. The building is used for stabling the cow and calf, one part being at present used as a workshop. A wood shed was also erected during the past summer; the building is 32 x 14 feet, and in it the wood is stored.

Accommodation.—There is at present accommodation for 30 pupils and a staff of 3, two matrons and a teacher.

Attendance.—The attendance during the past year was as follows:—first quarter, 5 pupils; second quarter, 21; third quarter, 25; fourth quarter, 32.

Class-room Work.—As most of the pupils are beginners in English, the work is very elementary, and consists largely of lessons in reading, spelling, writing, arithmetic; geography and composition being taught in a school class of 4 pupils.

Farm and Garden.—The boys are taught to sow the seed and plant the potatoes and are also trained to use the hoe both in the garden and potato patch. Cabbages, onions, cauliflowers, tomatoes, celery and lettuce are grown in the garden.

Industries Taught.—The girls are trained in all household duties, while the boys are taught outdoor work in general, such as might be found on any farm, saw wood, carry water, milk the cow, feed and water the cow and calf, also keep the stable clean.

Moral and Religius Training.—All school work is intended to have a moral training. There is one-half hour each day set aside for religious instruction. In this period the pupils are taught such scriptural truths as are thought to be most needful. The Lord's Prayer, the Creed, the Ten Commandments, and choice passages of scripture are taught so as to be memorized by all.

Health and Sanitation.—Up to January of the present year, the children were for the most part healthy. One little girl, however, Frances Pigeon, was taken ill last summer, and in spite of careful attention passed to rest, the doctor being unable to diagnose her case. This winter grippe has passed through the school and with 3 or 4 exceptions all the children have been laid off for a time. The grippe this year with the Indians seems especially hard to shake off; but with careful attention we hope to be able to pull them all through. Harriet Pekoday, aged 12, died of congestion of the lungs last January.

The lavatories, being outside, are kept clean and are scrubbed out each week. The school-room and all rooms in connection with the building, are kept thoroughly cleansed, sweeping, dusting and scrubbing being performed in most cases by the larger girls of the school. There is as yet no system of drainage, and no provision for isolation of persons afflicted with contagious disease.

Water Supply.—All water used is carried from the lake.

Fire Protection.—We have practically no system of fire-protection. There is usually on hand a goodly supply of water in tubs and pails, there being no hose. There is a ladder reaching to the roof, but we have no fire-escapes.

Heating and Lighting.—The building is heated entirely by means of stoves, wood heaters. There is one stove in which coal is sometimes used. The building is lighted by means of coal-oil lamps.

Recreation.—Outdoor games are indulged in with great pleasure, football, skating, snow-shoeing and sleigh-riding have each their delights for the children.

I have, &c.,

ERNEST O. DUKE,
Principal.

PROVINCE OF ONTARAIO,
ST. JOSEPH'S INDIAN HOME,
FORT WILLIAM, March 31, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—We have the honour to submit our annual report of the above school for the fiscal year ended March 31, 1908.

Location.—The school is located on the Fort William reserve, on the south bank of Kaministikwia river, between east and west Fort William, and about 4 miles from the picturesque Mount McKay.

Land.—About one acre of land surrounds the home, situated in the Thunder Bay district. The land is divided into playgrounds, one for boys and another for girls, vegetable and flour garden. The soil though sandy, produces very fine vegetables. Until now the land has been the property of the school, but has been purchased by the Grand Trunk Pacific Railway Company. We expected the new home to be erected at Mission Bay, but now it is decided to build at Fort William East, and it is to be completed by first of October next.

Buildings.—The home is of frame, on a stone foundation. Its dimensions are 95 x 45 feet. Painting and decorating on the interior have made it more cheery and attractive. The school-house is not in good condition, but improvements have not been deemed advisable on account of the removal.

Accommodation.—There is ample accommodation for 75 pupils and a staff of 12.

Attendance.—There are 49 pupils registered, 20 boys and 29 girls. During the year, 32 were discharged and 25 admitted.

Class-room Work.—The programme of studies prescribed by the department is followed as closely as possible, under the circumstances. The subjects taught are religious instruction, grammar, drawing, spelling, arithmetic, history and geography, but special attention is given to reading, writing and arithmetic. The progress is encouraging. English is generally spoken, and is now familiar to all the pupils.

Farm and Garden.—Although the extent of garden is limited, still the vegetables raised help to supply the home. The boys find weeding here good exercise.

Industries Taught.—All the general work of the premises is performed by the pupils. The girls are taught all kinds of useful household work, such as: hand and machine sewing, dressmaking, mending, darning, knitting, washing, ironing, house-cleaning, making bread, cooking and baking. The bread used in the school is made by the girls. The boys are trained to habits of neatness and cleanliness to work in the garden, attend flowers and lawn, and make proper use of time.

Moral and Religious Training.—A certain time each day is devoted to Christian doctrine. Every day, therefore, there is memorizing of some lesson of catechism, and several times a week, explanations are given. Morning and evening prayers are attended in the chapel. The character of each pupil is cultivated with care.

Health and Sanitation.—The general health has been very good. The attending physician has not called, except in one case of influenza. The sanitary conditions are looked after carefully and everything is clean around the place.

Water Supply.—We have an ample supply of water, conveyed to the apartments by means of pipes attached to a windmill.

Fire Protection.—Two hundred feet of hose, 2 fireman's axes, and 3 Star glass-lined fire-extinguishers are in readiness.

Heating and Lighting.—The building is heated entirely by 3 large hot-air furnaces, wood being the fuel used. The means of lighting are the oil-lamps.

Recreation.—Outdoor games are very popular, long walks in suitable weather are enjoyed. In summer, picnics are given to the delight of the pupils. Skating and boating in season are the pleasures most loved by the pupils.

General Remarks.—At Christmas, the children always have an annual concert and also a Christmas tree, to which the parents and benefactors are invited. The programme rendered by the children consists of drills, choruses, solos, recitations, and plays. We are greatly indebted to the pastor of the Mission, Rev. N. L. Dugas, for his untiring interest in our work and all that concerns the children's welfare.

We have, &c.,

SISTERS OF ST. JOSEPH.

PROVINCE OF ONTARIO,
MOHAWK INSTITUTE,
BRANTFORD, April 25, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit a report on the Mohawk Institute for the year ended March 31, 1908.

This institution was established by the company for the propagation of the gospel in New England and parts adjacent thereto, established, 1649; chartered, 1661; called briefly the New England Company, in the year 1831.

Location.—The school is situated in the township of Brantford about 1¼ miles from the market-square of the city of Brantford.

Land.—The land comprises 380 acres, as follows: lot No. 5 Eagle's Nest, township of Brantford, 10 acres, Crown grant, on this are the buildings; and 194 acres by license of occupation; Mohawk Glebe lot, city, 176 acres.

Buildings.—The building is in the form of the letter H, built of red brick with cut stone basement, roofed with shingles laid on asbestos paper. The main building is 79 x 42 feet, and has 2 wings, 60 x 36½ feet each. The building is 2-storeys high, with basement and attic.

The Main Building.—In the basement are the stores, including insulated cold store, officers' dining rooms, boiler-room, girls' clothing-rooms and lavatory. On the first floor are the offices, sewing-room and female officers' rooms. The second floor contains the superintendent's residence and two sick-rooms.

North Wing.—In the basement are the dining-halls and kitchen; on the first floor: class-room, master's room and farmmen's rooms; on the second floor is the boys' dormitory.

South Wing.—The basement comprises the girls' play-room, boot room and flush water-closets; on the first floor is the class and assembly room, the second floor is the girls' dormitory; on the third floor a large dormitory has been finished this year to accommodate 16 beds. Each dormitory has an iron fire-escape and door opening into the main building.

Other Buildings.—Boys' playhouse, 74 x 20 feet, two and a half storeys; laundry, 30 x 20·3 feet, two storeys; dairy, 18 x 13 feet; barn and cow stables, 97 x 35 feet; silo (cement), 30 x 16 feet; hog-pens, 72 x 30 feet and 60 x 13·4 feet; horse and cattle stables, 82·8 x 22·5 feet with room for 16 horses and 16 cattle; carpenter's shop, implement-house, drive-house, wagon-shed, poultry-house, two greenhouses, an ice house, a cement frost-proof fruit-house, 22 x 12 feet; the latter has been erected this year, as has also a small hospital.

Accommodation.—Accommodation is provided for 120 pupils and a staff of 12, including 3 farm-hands and a gardener.

Attendance.—The return for quarter ending March 31, shows 115 pupils, classified as follows:—

Standard	I	12 pupils.
"	II	10 "
"	III	25 "
"	IV	22 "
"	V	21 "
"	VI	25 "
		115 pupils.

The average attendance for the year was 108.

Class-room Work.—This covers the full course prescribed by the department and the first year of high school work. Two pupils passed the examination for entrance into the high school and 4 girls who have taken our full course have attended the Collegiate Institute.

The school hours are from 8.30 to 12 a.m. and from 1.30 to 4 p.m. in summer; and in winter from 8.45 to 12 a.m. and from 1.30 to 4.p.m.; and from 7. to 8 p.m.

All pupils in standards IV, V and VI, have private study from 8.30 to 9.30 p.m.

Pupils form two divisions 'A' and 'B'; one week 'A' division attends school in the morning and 'B' division in the afternoon; the next week the order is reversed.

The pupils in standards I and II are in school full time throughout the year.

Farm and Garden.—The season was very unfavourable, a drought injured the pastures, corn and root crops. The farm supplied the institution with provisions, $1,464.34, and the cash sales were $3,526.79.

Industries Taught.—Farming, gardening and the care of greenhouses form the principal occupations of the boys and include the management of a dairy of over 30 cows and the raising of pigs, also the cultivation of plants and flowers for market.

Girls' Work.—The girls are trained for domestic work, including sewing, knitting, dressmaking, cooking, baking, laundrying and butter-making. They make all their own clothing, also that of the boys, with the exception of the best tweed uniform, an issue of which is purchased every other year.

Moral and Religious Training.—Morning and evening prayers are conducted for the whole school daily, and divine service at His Majesty's chapel of the Mohawks at 11 a.m. on Sundays. Religious instruction is given daily in the schools and on Sunday from 9 to 10 a.m., 2.30 to 3.30 p.m. and 7 to 8 p.m.

The boys are organized into a cadet corps, No. 161, for which the Militia Department has supplied arms. The boys are divided into four sections, under senior boys, who are responsible for the cleanliness and order of their respective sections. Four section monitresses exercise similar supervision over the girls.

Health and Sanitation.—The health of the pupils was very satisfactory until January and February, when we had an epidemic of grippe; but no fatalities.

The sanitation is good, the drainage being counected directly with the city sewers.

Water Supply—The water-supply is from the city water-works.

Fire Protection.—Fire-protection has been installed in connection with the fire department of the city; 4 hydrants with supply of hose, 2 stand pipes with hose connection on all floors, 4 chemical fire-extinguishers and 2 dozen blazekiller tubes, placed in the various buildings, axes and extension ladders. A new branch fire-hall has been erected in the immediate neighbourhood, towards which we contribute $60 per year.

Heating and Lighting.—Both wings occupied by pupils have coal and gas furnaces of large capacity, estimated to change the air in school-rooms and dormitories every hour. The main building is heated with hot water, the sewing-room having a radiator constantly supplied with fresh air from the outside. The kitchen, laundry, and dairy, use only natural gas.

All buildings, including horse and cow-stables, are lighted by electricity.

Recreation.—The recreation hours are one hour at noon, two hours in the evening in summer and one hour in the winter and for school divisions throughout the year from 4 to 5 p.m.; also one-half holiday each week.

There is no school from July 16 to August 21. During this time the teachers take their vacation, each pupil has half a day holiday and the industrial work of the institution goes on as usual.

The boys are furnished in their playground with swings and horizontal bars. They have a field where they play lacrosse, baseball and football; they also have a bugle band, in which they are much interested, and both girls and boys have good toboggan slides. The girls are provided with swings, footballs, croquet, skipping-ropes, balls, &c. Those who prefer to read are furnished with magazines and books from the school library.

I have, &c.,

R. ASHTON,

Superintendent.

PROVINCE OF ONTARIO,
MOUNT ELGIN INDUSTRIAL INSTITUTE,
MUNCEY, June 22, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit a report of the Mount Elgin Industrial Institute for the year ended March 31, 1908.

The institute was founded by the Methodist Missionary Society in the year 1847.

Land.—The institute farm contains 225 acres, situated on the west bank of the Thames river, in the township of Caradoc, county of Middlesex, province of Ontario.

Buildings.—The present main building was erected in 1895, and has four storeys of brick, mounting a stone basement. The central portion of this building furnishes in the basement, kitchen, bake-room and store-rooms, and on the first, second and third storeys residence for the principal and quarters for four ladies and three gentlemen officers. The south wing is devoted to the girls, the basement furnishing lavatory, clothes-room, recreation-room, and bath-room; the first floor contains store-room and sewing-room, while the third and fourth floors are occupied as dormitories. In the basement of the north wing is placed the pupils' spacious dining-room. The first floor is occupied as a chapel, while the third and fourth floors serve as dormitories for the

boys. All these rooms are large and well lighted. The old building, now called the annex, built in 1847, was rebuilt in 1897, and furnishes dwellings for the families of two officers, two school-rooms and a four-cot hospital.

Laundry.—A substantial two-storey brick building with cellar in basement.

Boys' Lavatory and Gymnasium.—This building, formerly a two-storey frame, with brick foundation, was destroyed by fire on the night of November 20, 1907. The origin of the fire is unknown.

The outbuildings comprise carpenter's shop, implement-shed, and carriage-house, all of which require repairs; also horse-barn with brick stabling, pig-pen, hay-barn, and two grain-barns with brick and concrete basements used as stables.

Grounds.—Extensive lawn and playground surround the main building on the west, north and south. The lawn and carriage-way at the front separate the boys' playground on the north from the girls' playground on the south.

Accommodation.—The main building furnishes ample room for from 100 to 110 pupils together with a staff of 10 officers. Private residences are furnished for 4 officers and their families.

Attendance.—The number of pupils authorized by the department for this institute is 100. The average attendance is 102.

Class-room Work.—The work of this department for the year has been quite satisfactory. One pupil passed the high school entrance examination, obtaining a high standing. It is our desire to add manual training as a special feature of class work as soon as we can secure a new workshop.

Farm and Garden.—The farm is composed of 225 acres of uplands and river flats, the only drawback being the increasingly heavy spring freshets, which inundate more than one-third of the land and frequently leave it littered with foul weeds and débris. A dyke some thirty rods in length at the north end of the low land would go far to protect these lands from serious floods.

Industrial Work.—The boys are instructed in all the various branches of agricultural work, such as ploughing, harrowing, tile-draining, fencing, cement-work, the planting and cultivating of roots and corn, harvesting, &c., the rearing and training of horses and cattle and the management of sheep and pigs.

The girls are instructed in domestic work, including housekeeping, baking, cooking, laundry and dairy work; also the cutting and making of garments and fancy needlework.

Moral and Religious Training.—Morning and evening service, consisting of singing, the reading of the scriptures and prayer, is observed daily. On the Sabbath morning the pupils attend divine service at the Colborne church, Muncey Mission, an officer always being in charge. One hour of each Sunday afternoon and evening is devoted to special Bible study in the chapel of the institute.

Health.—The general health of the pupils has been good. One girl died from an attack of pneumonia followed by pulmonary tuberculosis. One girl was discharged suffering in a similar way, and one boy suffering from tuberculosis of the intestines.

Water Supply.—An additional hydraulic ram was installed during the year. A small collecting cistern was also erected and covered with a small frame building kept closed under lock; the drive pipes leading to the hydraulic rams draw their supply from this; this precludes any danger of contamination. New piping was installed in the main building, much improving the pressure of all closet flush tanks.

Fire Protection.—Two large galvanized iron tanks, containing some fourteen tons of water, are situated in the upper portion of the main garret. From these inch-and-a half galvanized iron pipes extend downward through the building, from which branches run to the several wings and corridors, giving attachments for eighteen hose. New open-mouthed hose-bibs and 400 feet of hose have been supplied during the year. In addition a special reel with 300 feet of hose is kept ready for outside emergencies.

Heating.—The heating of the main building and annex is provided for by three hot-water coal furnaces. Supplementary heat is furnished to two class-rooms by two wood-burning stoves.

General Remarks.—Improvements carried on during the year added much to the appearance and convenience of the institute. We painted all the outside woodwork of the main building, pupils' dining-room, kitchen, bake-room, corridor, girls' lavatory, play-room and basement. The walls of the chapel were covered with berlap and cotton, all of which together with the woodwork was carefully and tastefully painted. All the plumbing in the main building was entirely overhauled and put in first-class condition, which, together with the improvement to sewers of a year ago, makes the sanitary conditions of the institute of the very best.

Fire, originating from some unknown cause, destroyed the boys' lavatory and gymnasium on the evening of November 20, 1907. This we have as yet been unable to replace, with the result that the boys are not so comfortabls as we should like.

The spring was cold and seeding was necessarily late, which, aided by a frost on July 4, resulted in the harvest being the lightest for many years.

I have, &c.,

T. T. GEORGE.

PROVINCE OF ONTARIO,
THE SHINGWAUK AND WAWANOSH HOMES,
SAULT STE. MARIE, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report of the Shingwauk and Wawanosh Homes for the fiscal year ended March 31, 1908.

Location.—The Shingwauk and Wawanosh Homes are situated on the north bank of the St. Mary's river, one and a half miles east of the business portion, yet within the town limits, of Sault Ste. Marie, in the province of Ontario.

Land.—The area of land in connection therewith is 93 acres, comprising park lots 1 and 2 in Tarentorus township, which was acquired by purchase by the Church of England authorities. The property is held in trust by His Lordship the Bishop of Algoma. Originally forest, the land is now, with the exception of a few acres, cleared. The soil is extremely light and rocky, and is best adapted for grazing purposes.

Buildings.—The buildings are admirably situated, fronting the river and consist of:—

1. The Shingwauk and Wawanosh Homes main block, 185 x 137 feet, with various wings and principal's residence adjoining, in which are the offices of the institution, kitchens, visitors' entrance-hall, staff-room, furnace-rooms, lavatories and dormitories.

2. A little to the east and almost in line with the main block, stands a large two-storey frame building, 60 x 30 feet, the ground floor of which is used as a drill-hall and play-room for the boys. On the upper floor the senior school is held.

3. Some 60 yards from this building, standing due east and west, is the Bishop Fauquier memorial chapel, erected in 1882, with funds subscribed anonymously in England and Canada, as a tangible, enduring and useful memorial to Algoma's first revered bishop.

4. Hospital with attendant's cottage adjoining.

5. Farmer's cottage and laundry, 20 x 20 feet.

6. Carpenter's cottage.
7. Factory.
8. Shoe-shop, barns, stables and various minor buildings.

Accommodation.—There is accommodation for 100 pupils, 60 boys and 40 girls, and 12 members of staff.

Attendance.—We began the year with 64 pupils, i.e., 37 boys and 27 girls; 8 boys and 4 girls were admitted; 8 boys and 5 girls were discharged; one girl is temporarily absent on the reserve: one boy died; and one girl was sent to the Weston Hospital, thus leaving 36 boys and 24 girls in residence at this date.

Class-room Work.—The whole school is divided into senior and junior divisions, under qualified teachers, in separate buildings. The hours of attendance are from 8.30 to 12 in the morning and 1.30 to 5 in the afternoon, with 15 minutes recess in each session. There is also an hour of study from 7 to 8 p.m., Wednesdays and Saturdays excepted. The curriculum adopted is similar to that of the public schools of Ontario. Progress made during the year was satisfactory, 3 boys and 5 girls were promoted from the junior to the senior division.

Industries Taught.—Every branch of carpentry work is taught by an experienced mechanic in charge. No trade has greater attractions for our boys, and generally speaking they quickly become adept at it. In addition to general repairs, glazing, mending tinware and furniture, repairing the dock, farming implements, and other articles too numerous to mention, our carpenter and his apprentices have re-shingled the memorial chapel, erected various partitions or division walls in different parts of the institution, and assisted the farm boys to chop cord-wood in the bush.

Our farm, consisting of 40 acres, is worked by a practical farmer, assisted by a number of boys. Operations, however, are considerably hampered by a rocky and light soil, and only in exceptionally favourable seasons can we expect heavy yields. The hay crop was fair. Dairy and garden products amounted to $562.65.

In addition to these industries, all the general and domestic work of the institution is performed by the pupils under staff supervision. The girls are taught sewing, laundry and general domestic work. They are bright and teachable, and take readily to such employments.

Moral and Religious Training.—The religious training is that of the Church of England.

Pupils and staff attend the Shingwauk Memorial chapel, or St. Luke's pro-cathedral in town. Morning and evening prayers are conducted daily in the school-room; and Sunday school on Sunday afternoon from 3 to 4.

Methods of punishment are fines, impositions, and keeping the pupils in to work on half-holidays.

Corporal punishment is administered in cases of gross disobedience, as a last resort.

Health and Sanitation.—Whilst we have to record the death of one boy, the health of the pupils generally was good.

Lime, phenyle and other disinfectants are used freely about the premises. A solution of phenyle or carbolic acid is used for scrubbing purposes occasionally.

All dormitories, floors and passages are scrubbed regularly.

Every precaution possible is taken to keep contagious diseases isolated. The school is visited by an appointed medical practitioner.

Water Supply.—An abundant water-supply is furnished through a private 3-inch galvanized iron pipe connected with the city water mains.

Fire Protection.—Our main protection lies in a 3-inch water pipe connected with the town water-works, and to which 2-inch hydrants placed inside and outside of the main building have connection, as well as two fire-tanks on the upper flats, having a combined capacity of 1,925 gallons, and which are kept full in case of emergency.

A pressure of 50 pounds is maintained at the school.

The main building is also supplied with chemical fire-engines and fireman's axes.

Heating and Lighting.—The main building is heated throughout by a hot-water system. All detached buildings, including the chapel, are heated by stoves. Coal-oil lamps only are used for lighting.

Recreation.—The pupils are all encouraged in outdoor games. Baseball, football, skating and hockey, in their seasons, are the favourite recreations.

The boys have a gymnasium in their drill-hall.

The girls' play-field is situated on the west of the main building, and surrounded by a fence much in need of repairs. A swing affords them much pleasure in fine weather, and for stormy days they have a cheerful recreation-room, 26 x 35 feet.

Toys, books, magazines and indoor games are provided.

General Remarks.—Of the pupils at present enrolled, 21 are motherless, 14 fatherless, and 11 have neither father nor mother. They are representatives of the following tribes: Ojibbewa, Iroquois, Cree, and Pottawattamie.

I have, &c.,

T. DOWLER,
Superintendent.
for G. L. KING,
Principal.

PROVINCE OF ONTARIO,
WIKWEMIKONG INDUSTRIAL SCHOOL,
WIKWEMIKONG, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the Wikwemikong industrial school for the year ended March 31, 1908.

Location.—The Wikwemikong industrial school is situated on the unceded portion of Manitoulin island, 10 miles north of the Manitowaning agency, in the village of Wikwemikong, on the west shore of Smith bay.

Land.—The land comprises about 200 acres, 70 of which are under cultivation, the rest being used as pasture. This land was granted by the Indians for the use of the missionaries, and is held in trust by them, for the combined purposes of the mission and the school.

Buildings.—The boys and girls are accommodated in two separate institutions about 200 yards apart, which are managed by two separate staffs, under the supervision of the principal.

The boys have their study and class-rooms, wardrobe and play-hall in a two-storey frame building, 50 x 90 feet.

The sick-ward, the kitchen and the dormitory are in the missionaries' residence, a three-storey stone building, 112 x 56 feet, where also the staff has its quarters. The dormitory is particularly healthy, being 108 x 40 feet, with a ceiling 17 feet high, and is well lighted and ventilated. There are in connection with it, baths and water-closets fitted up according to the most approved methods.

The refectory and bakery are located in an old mission stone building, connected with the main building by a passage-way. This building is 43 x 33 feet. The shoemaker-shop is also in this building.

The girls and their staff are housed in two three-storey frame buildings, connected by a passage-way, which are 132 x 46 feet, and 35 x 50 feet, respectively, and situated

farther up the hill. Their class-rooms, recreation-hall and dormitories are spacious and airy.

A few yards to the south stands a two-storey frame structure, 40 x 50 feet, used for a wash-room and its various appurtenances, also for a store-room, bakery, &c.

Towards the shore of the bay are located the blacksmith and paint-shops, combined in one building.

Closer to the shore is a little saw and planing-mill, and the carpenter-shop.

There are yet to be mentioned, in connection with the farm, three barns, one 80 x 40 feet, another, 110 x 40 feet, and a third, 75 x 35 feet. Each barn has a spacious stable in its basement. Mention should also be made of piggeries, henneries, sheds for agricultural implements and various vehicles, wood-sheds and ice-house.

Accommodation.—There is ample room to accommodate 80 boys and as many girls, with their respective staffs.

Attendance.—The boys were 80 in number, with 2 teachers and 12 officers; the girls were 62, with 2 teachers and 10 officers. The day-pupils are not comprised in these figures.

Of these 142 pupils, 134 only receive the per capita grant.

Class-room Work.—This is governed by the official programme of studies for Indian schools. The time appointed for it is from 9 to 11.45 a.m., and from 1.30 to 4 p.m., with a short recess in the middle of each session. Besides, the boys have one hour and a half for study each day; but on Sundays and Saturdays, they have twice as much. A library is attached to the institution, and supplementary reading is fostered; so is letter-writing. The girls devote one hour to study each day.

The pupils are divided into 4 sections, 2 for the boys and as many for the girls, and are under the tuition of 4 different teachers; the pupils of the lower grades being taught in the same room in connection with the day-pupils.

The pupils were graded as follows:—

	Pupils.
Standard I.	17
" II.	30
" III.	65
" IV.	25
" V.	5
	142

Farm and Garden.—Farming being eventually the most common occupation of our children when they return home, the boys of the institution habitually spend some time at this work, even the smallest; every one, of course, according to his capacity.

Industries Taught.—The most common industry of the larger boys is farming; some others are taught carpentering; two learned shoemaking this year.

Besides this special training, all the pupils are employed about 2 hours daily, each one according to sex and ability, at various kinds of labour, such as sweeping, scrubbing, sawing and splitting fire-wood, dairying, gardening, feeding stock, helping in the kitchen and on the farm. The laundering is done at the girls' school, with the help of Indian women. The more advanced girls receive special training in sewing by hand and machine, dress-making, knitting and cooking. The pupils generally take well to these kinds of labour. The girls in particular show that they appreciate the zeal of their teachers; for, after they have left school, those who belong to Wikwemikong come regularly once a week to the school to receive lessons in crochet and fancy-work.

Moral and Religious Training.—The main object of this institution being the forming of religious men fit for the everlasting ends of our existence, the pupils are taught not to dissociate their studies and their manual labours from religious views. Every day, therefore, there is the memorizing of some lesson in catechism or of Bible

history; and several times a week explanations are given, adapted to the capacity of the different classes. The children attend all the religious services of the parish church. On Sunday evenings, the senior boys and girls are called upon to write a report of either of the two sermons they have heard during the day.

No corporal punishment is administered, save in cases of gross insubordination or misbehaviour.

Health and Sanitation.—The sanitary condition of the school is all that can be desired. The general health of the pupils was very satisfactory during this last year. True, we had an epidemic of grippe; but it proved to be of a light form. One case, however, was complicated with pneumonia; but fortunately it ended with complete though slow recovery. It is almost useless to mention diseases of the skin, which are but too common among the Indians, and which therefore are frequently to be seen among our pupils.

When the weather permits, the boys have their daily bath in the bay. They also have up-to-date baths in their dormitory.

Water Supply.—A windmill, and a tank holding 15,000 gallons, supply excellent water from the Georgian bay for all purposes, galvanized iron pipes conducting it to all parts of the institution.

Fire Protection.—Hydrants in connection with the tank and supplied with two-inch hose on every floor of the main buildings, constitute our principal protection against fire, besides some fire-extinguishers, fireman's axes and buckets. Both schools are supplied with an excellent fire-escape. The dormitories can be vacated by the fire-escapes in less than 3 minutes.

Heating and Lighting.—Both schools are heated by box-stoves, and are kept comfortable. The boys' dormitory, however, and the staff's quarters are heated by hot water in connection with the missionaries' residence. Light is furnished by acetylene plants.

Recreation.—At least two hours daily are given exclusively to recreation. So are Saturday afternoons. The first Tuesday of each month is a free day for every pupil who has given satisfaction throughout the month. Both schools have playgrounds furnished with suitable games and gymnastic appliances, and play-halls for bad weather and evening recreation in winter.

General Remarks.—I may say confidently that the school is contributing largely to the elevation of the moral tone, and development of habits of thrift and industry, the enlightenment of the mind generally, and the improvement of the physique among our Indians. Our present pupils appreciate more their training, and rise to a higher level than our former ones. They take more interest in reading, and develop to a certain extent an intellectual life.

The pupils receive instruction in Gregorian chant and vocal music, and I am sure this contributes a great deal to the formation of their taste, without mentioning the advantage of the training of the voice.

I have, &c.,

TH. COUTURE, S.J.,

Principal.

PROVINCE OF MANITOBA,
BIRTLE BOARDING SCHOOL,
BIRTLE, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of the Birtle boarding school for the year ended March 31, 1908.

Location.—The school is situated on the north bank of the Birdtail river, within the limits of the town of Birtle and 12 miles from the nearest reserve.

Land.—There are 30 acres owned by the school and 30 acres of rented land, all situated within the municipality of Birtle in 6, 17, 26. Twenty-five acres are taken up with wooded hills and ravines and afford pasturage for stock; 35 acres are ploughed, ready for spring sowing. Negotiations are fully completed for the purchase of a quarter section, situated 2 miles northeast of the school, being the southwest quarter 16, 17, 26, Birtle municipality.

Buildings.—The school is a two-and-one-half stone structure with a good basement. The repairs begun last year have been completed. Except for painting, the building is now fully equipped for its purpose. The barn is a frame structure with a stone stable and root-house beneath. There is also a frame lean-to for storing implements. In addition there are concrete stables, 16 x 46 feet, for swine and store-cattle. We have a log ice-house and a good frame hen-house. Runways for hogs and poultry were built during the year, of stone, topped with wire fencing.

Accommodation.—The school will house 60 pupils and a staff of 6, besides providing rooms for 6 sick children.

Attendance.—The year opened with 48 on the roll and closed with the same number: 5 were received and 5 were discharged. Of the latter, 2 were transferred to other schools, 2 were sent home because of sickness, and 1 graduated. The grant is allowed for 45.

Class-room Work.—The pupils are making steady progress under Miss McGregor's capable instruction. We have now a fifth standard. The school, in competition with local schools, won most of the prizes offered at the local fair.

Farm and Garden.—Twenty acres were under cultivation and 15 more have been broken. We had sufficient vegetables and grain to provide for the needs of the school and our stock during the whole winter. We have added a binder to our equipment. From our store-cattle we have provided our meat for the winter. At present we have 4 horses, 13 cattle, 5 hogs and 50 hens.

Industries Taught.—The girls are taught housework thoroughly, receiving instruction in sewing, knitting, laundrying, cooking and baking, dairying and care of rooms. In summer they assist in milking and gardening. The boys, in addition to caring for their own dormitories and basement, devoted their time to gardening, farming and the care of stock. At the local fair, the boys and girls secured 9 prizes in open competition, winning out for vegetables, roots, baking, bead-work, darning and drawing.

Moral and Religious Training.—The children all attend the regular services of the Birtle Presbyterian church. Miss McLaren conducts a Sabbath evening Bible class for the smaller pupils; Miss Macgregor conducts religious exercises daily in the class-room, having the pupils memorize verses and hymns and learn the meaning of scripture. The principal leads in morning and evening prayers.

Health and Sanitation.—The health of the pupils has been remarkably good, save for six scrofulous patients, all of whom have been returned cured from the tent hospi-

tal on Weywayseecappo's reserve. All have come through the winter in good strength. The completion of our plumbing system, including a septic tank of 1,000 cubic feet capacity, and the perfecting of our system of ventilation, have put our sanitary arrangements on a city basis. Our altitude makes drainage easy.

Water Supply.—This is the great lack of the school. Most of it is hauled from the river, a third of a mile up a steep hill. The rest is got by suction from a well 900 feet away. The river water is good even in summer. The well water is exceedingly hard. In winter, the demands of our plumbing system added to the regular needs for cooking, washing and laundry purposes, compel us to keep two teams hauling water two days per week. In summer good drinking water is brought from the civic spring.

Fire Protection.—Our plant is complete and self-contained. Through the building are distributed 12 fire-axes and 25 fire-pails. In the basement is a 40-barrel galvanized iron tank, into which water is syphoned or pumped from the school well. From it, by means of a 2-horse power gasolene engine and a heavy force-pump, the water is elevated to a similar tank in the attic. From the latter runs a 4-inch stand-pipe, from which run 2-inch canvas hose, kept folded upon a swinging rack, on each floor from basement to attic. In the attic, this year, a hand force-pump has been added to elevate water from the attic tank to the roof. Hose is kept ready in a cupola on the roof. To ensure safety, plank walks have been placed along the ridges and iron foot-rests nailed to the pitches of the roof. Fire-drill is practised regularly. The big boys comprise the fire-brigade. The alarm is given by means of electric gongs ringing simultaneously. Exit can be made either by one of the three staircases or by the fire-escape.

Heating and Lighting.—The building is heated by 3 wood furnaces and 1 hot water heater. Two of the former and the latter are new, having been installed this year. The building is now comfortable save in very windy weather. The acetylene plant now lights the whole building, having been extended during the year. No lamps are now required. The gas is supplied by the civic plant and is economical and safe.

Recreation.—The children enjoy football, baseball, swimming and tennis in summer and skating, coasting and hockey in winter. Rabbit chases are also encouraged and tramps along the hills. Indoor games are indulged in, from 7 to 9 in the winter evenings, under the supervision of the ladies of the staff.

General Remarks.—The hearty thanks of the school are due to the Department of Indian Affairs and to the Women's Foreign Missionary Society of the Presbyterian Church in Canada for the liberal way they have repaired and equipped the school at an outlay of over $5,000.

I have, &c.,

W. W. McLAREN,
Principal.

MANITOBA SUPERINTENDENCY,
CECILIA JEFFREY BOARDING SCHOOL,
KENORA, ONT., April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

Location.—The Cecilia Jeffrey school is situated in Ontario near the western boundary, at the west end of Shoal lake, which is connected with the Lake of the Woods by a narrow, rocky channel, about one mile east across Rice bay from Shoal

Lake reserve No. 40. It is in a southwesterly direction from Kenora, 45 miles by water.

Land.—A peninsula—practically an island, as it is separated from the mainland by an impassable muskeg—containing 210 acres and registered as D. 492, was secured by the Foreign Mission Committee of the Presbyterian Church from the Ontario government. The greater part is composed of rocky ridges with intervening swamps covered with timber and scrub. Some pieces, if cleared, would make good garden plots, but farming to any extent is out of the question.

Buildings.—The main building is 66 x 38 feet, a two-storey frame, on stone basement. In the basement are the laundry, furnace-rooms and bath-rooms. On the first floor: class-room, dining-rooms, office, reception-room and kitchen. Second floor: 2 dormitories for the boys and 2 for the girls, with hall and 4 staff bed-rooms between. The full length of the attic is used for water tanks and for storing clothing. A new wing, 30 x 22 feet, was added last summer but is not yet completed. The basement is to be used for dairy and root cellar with partition between; first floor for kitchen storeroom and pantry; second floor for staff bed-rooms, the old ones to be used for isolating sick children. There is a stable, 36 x 24 feet, frame, an ice-house, 12 x 8 feet, and a residence for the principal, 36 x 24 feet.

Accommodation.—There is accommodation for 40 pupils and for 5 members of staff.

Attendance.—There are 33 on the roll and there is an average attendance of 27.

Class-room Work.—The regular course prescribed by the department has been followed. A few of the larger pupils attend in class-room half the day and during the other half day are taught industrial and household work. All other pupils are in class-room the full day. Progress in writing, drawing, reading, spelling and composition is good; and in all other branches, fair. The teaching of the English language has been emphasized.

Farm and Garden.—We had a good supply of vegetables, such as corn, peas, turnips, beets, carrots and cucumbers, from a small garden plot near the school, also a quantity of strawberries from cultivated plants. Our potatoes were grown upon an island about a mile from the school, an inaccessible place in stormy weather. We have started to clear a plot on the school land for potatoes and other vegetables.

The live stock consists of 2 horses, 3 cows, and 5 young cattle.

Industries Taught.—The older boys are taught in winter the care of stock, milking, the management of horses, hauling wood and hay, and in summer, gardening and work on the steamboat. The younger boys are taught to work by giving them lighter employment about the school for a short time each day. The girls are given instruction in all kinds of housework, including cooking, baking, washing and ironing, knitting, sewing and mending.

Moral and Religious Training.—During the week there is worship morning and evening, including singing, and reading a portion from the Bible. Teaching in the class-room is also begun with Bible-reading and prayer. On Sunday there is a service in the morning, Sunday school in the aftrnoon, and a song service in the evening. At all times the teachers in their several departments seek to inculcate all the sound moral precepts which tend to make the character of a good citizen.

Health and Sanitation.—During the latter part of December 3 of our pupils died from the attack of an epidemic of cerebro-spinal meningitis. Apart from this, the health of the pupils has been very good. All possible precautions are taken to keep the building in a clean and sanitary condition; the sewer empties into a bay on the opposite side of the peninsula from where the water-supply is obtained. The building is fairly well ventilated, the windows are large and are kept open when the weather permits.

Water Supply.—An abundant supply of pure water is drawn from Shoal lake and forced by a windmill into 2 large tanks in the attic, from whence it flows through

pipes to all parts of the building. A boiler connectd with the kitchen range supplies hot water. There is a large tank in the basement for rain-water, which can also be filled from the windmill pump.

Fire Protection.—The above mentioned tanks would furnish a good supply of water in case of fire; there are hydrants on each floor with hose attached and fire-buckets are kept in readiness, as are also axes and ladders. There is a fire-escape from the boys' dormitory and 12 dry-dust extinguishers are hung in convenient places in the building.

Heating and Lighting.—The school is heated by 2 large hot-hair furnaces, kitchen range and laundry stoves. Coal-oil lamps are used mainly for lighting; but wax candles are used when it is necessary to carry lights about the rooms.

Recreation.—In summer the children delight in swimming and boating; football and other games are also indulged in. In winter skating and coasting are the out-door amusements most in favour, while inside, games of different kinds are played in the evenings.

General Remarks.—Many of the Indian parents show a commendable desire to have their children educated, while some manifest the greatest indifference and a few are decidedly averse to it.

The whole staff was changed during the year and all are beginners at boarding-school work. In this connection I wish to acknowledge with thanks the kindness and courtesy of Agent McKenzie, whose experience and advice have been of great value to me.

I have, &c.,

F. T. DODDS,
Principal.

PROVINCE OF MANITOBA,
FORT ALEXANDER BOARDING SCHOOL,
FORT ALEXANDER, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the Fort Alexander boarding school for the fiscal year ended March 31, 1908.

Location.—The school is picturesquely situated on the south bank of Winnipeg river on the Fort Alexander reserve, about one mile east of where the river falls into Lake Winnipeg. The location is ideal for a boarding school; the natural features of the country immediately surrounding the school being magnificent and affording scenery as fine as any in this part of the province.

Buildings.—The hennery and log barn which were being erected last year have been completed. One class-room has been enlarged. Iron sheets have been laid on the stairs. A board-walk has been made in front of the house, leading from the gate. A ditch has been dug along the board-walk and around one side of the house to allow the water to flow more freely in the spring; we have found this a real benefit this year. A cesspool also has been made to prevent any obstruction in the pipes of the water power.

Attendance and Accommodation.—Sixty pupils have been in attendance since April 1, 1907. We have ample accommodation for that number of children and a staff of 10. We have 29 boys and 31 girls.

Class-room Work.—School is open from 8.45 to 11.45 a.m. with recess of 15 minutes, and from 1.45 to 4 p.m., being interrupted by a short recess. English is the language taught and spoken in the school. There are two teachers of experience. The children are encouraged in their studies and good conduct by rewards being given them at the end of each week. The programme of studies prescribed by the department is adhered to as closely as possible. In exceptionally busy seasons the larger pupils work outside half the day, but this is made up to them in the slack days of winter when they attend school the whole day. The grading of the pupils is as follows:—

	Pupils.
Standard I.	17
" II.	9
" III.	7
" IV.	10
" V.	17
	60

Industries Taught.—The girls are taught housework, washing, ironing, darning, mending, cooking and baking. The more advanced girls receive special training in sewing, knitting and dressmaking. The boys' daily task is to saw and split wood required for fuel, besides all the general routine of house duties. Some of them are daily engaged in the stable under the supervision of the farmer. During the summer most of the boys are taught farming and gardening. One boy is employed in making and repairing boots, shoes and harness.

Farm and Garden.—All the land is inclosed within a wire fence, the posts being about 12 feet apart. Spacious grounds are allotted for the use of the children in which they have a favourable opportunity for healthy exercise and recreation.

Religious and Moral Training.—Particular care is given to this most important part of education. Special religious instruction is given to the pupils daily, and on Sunday afternoon by the principal himself. Every day prayers are said in the chapel, morning and evening; the pupils attend all the religious services of the parish church. The conduct of the children has been in general very good.

Health and Sanitation.—I am happy to say that the health of the children is thoroughly satisfactory. The sanitary conditions are good. The rooms are well ventilated and every care is taken as to cleanliness. In summer the boys are allowed to bathe in the river at least once a week and in winter a warm bath is taken by every child.

Water Supply.—Water is procured from the river by means of a pump, run by a gasolene engine, and carried to large tanks in the attic, from whence it is conveyed through the building by pipes.

Fire Protection.—There are two ways of escape, one on each side of the house. A hose is attached to a tank in the attic, furnishing an ever-ready means of fighting fire. Besides this, 15 Eclipse dry dust fire-extinguishers have been placed in different rooms in case of pressing need.

Heating and Lighting.—The buildings are heated by furnaces. Wood is the only fuel used, as there is an abundance of it in the vicinity. Acetylene gas and coal-oil lamps are used for lighting purposes.

Recreation.—The children have many indoor games for winter-time. On the grounds they enjoy themselves at all the games and sports common to their age. Long walks in the woods and along the river are often taken. This winter the Inspector's visit was a real treat to them.

I have, &c.,
PH. VALES, O.M.I.,
Principal.

MANITOBA SUPERINTENDENCY,
FORT FRANCES BOARDING SCHOOL,
FORT FRANCES, ONT., March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the Fort Frances boarding school for the fiscal year ended March 31, 1908.

Location.—The school is situated on the southwest end of the Rainy lake on Couchiching reserve, close to the boundary between Canada and the United States.

Land.—The area of land belonging to the school, and immediately surrounding it, comprises about 65 acres. I have already expended over $1,800, cutting, removing the timber off the land, ploughing about 10 acres, and preparing the property for cultivation.

Owing to the sandy nature of the soil, it will be necessary in the near future to build an embankment in front of the school in order to protect the property. The shore was so damaged last year by the high water that we shall be obliged to remove the cemetery, to have a road, and the line shown on the map will have to be changed.

Buildings.—The buildings at present in use are as follows: house with an addition for general workshop, the building is one storey, 18 x 30 feet, on a stone foundation, one part (the addition) is used for carpenter work, and the other part is the office and bed room of the principal; one room is used for the gasolene engine, a pump of 50 gallons per minute, and the gas-plant.

A barn temporarily built, and an ice-house, are used for the summer.

The main edifice, or the institute proper, is a 3 storey building. Its dimensions are 40 x 70 feet, and the height from the ground to the top roof is 59 feet; the building is provided with all modern improvements.

The basement contains a dining-room for the children and the principal, a dining room for the sisters, a kitchen, pantry, dairy-room, lavatory and root-house, the boiler-room for the heating plant and water-closets at both ends.

On the first floor are the entrance, the parlours, chapel, two school-rooms, one 16 x 36 feet, and the other 16 x 20 feet, and the boys' play-room, 16 x 36 feet, provided with two water-closets and a wash basin.

On the second floor is situated the girls' play-room, 16 x 36 feet, provided with three water-closets (self-flushers) and a wash basin, a sewing-room and three rooms for the staff. The sisters are provided with a ward-room, bath-room and water-closet, two sick rooms, one for girls and the other for boys, all of which are provided with water-closets, and wash basins with hot and cold water.

On the third floor are situated two large dormitories, 34 x 38 feet, provided with four water-closets and two bath-rooms, one for girls and another for boys. Each dormitory is ventilated by four ventilators, two close to the floor, bringing the fresh air from outside, and two up the siding in the chimneys, making the draught.

Accommodation.—Under the present arrangement, there is accommodation for 70 pupils and a staff of 10 sisters.

Attendance.—The pupils being all boarders, the attendance is perfect and regular, and I am happy to state that the Inspector noticed great improvement in general application, cleanliness, and education of the children. We have more than the authorized number of pupils.

Class-room Work.—The programme of studies prescribed by the department is followed as closely as possible under the circumstances. The subjects taught are religious instruction, grammar, parsing, spelling and useful knowledge in arithmetic, history and geography. Special attention is given to reading and writing. The progress is good and encouraging.

Farm and Garden.—There are about 10 acres under cultivation, comprising the garden, in which is raised a part of the supply of potatoes and other vegetables required for the use of the school.

Industrial Work.—Our children have special hours each day for manual work, but the parents are very opposed to seeing them working; it is a perpetual fight with some Indians on account of their children working. The girls are taught sewing, knitting, washing, &c., and general housework, so as to prepare them to become good housekeepers.

Moral and Religious Training.—Particular attention is given to this important branch of education. A short religious instruction is given daily on some subject, such as order, cleanliness, politeness and obedience, after which hymns are sung. The moral character of each pupil is cultivated with care.

Health and Sanitation.—The sanitary condition of the school, owing to the excellence of our fresh air drain from the lake and the abundance of light, is very good and the healthy appearance of the pupils is a surprise to all the visitors. Baths are taken frequently and the premises are always kept in perfect order.

Water Supply.—Our water-supply is taken from the lake at 1,800 feet distance from the shore, and we have all the water necessary for all purposes and an unlimited supply at hand in case of fire. We expended over $1,200 last year to put in good condition the water pipe in the lake. We dug under the water level over 1,500 feet into the lake to preserve the pipe from frost and on account of the low water mark. We have extended the pipe 500 feet more. The water is first quality.

Fire Protection.—Fire-protection is abundantly provided for by means of 10 fire-extinguishers, disposed throughout the building as follows: three in the basement, one in the kitchen, one in the passage and one in the boiler-room; two on the second floor, one at each end of the passage; two on the third floor, one in each dormitory and one in the attic. Besides that we have a gasolene engine and a powerful pump of 50 gallons per minute, connected by a 2-inch stand pipe with 3 tanks in the attic, holding 2,100 gallons of water, which tanks can be shut off partially or altogether by one valve; the water is then pumped directly into the stand-pipe, which gives a pressure of 100 pounds on 1½-inch hose with ½-inch nozzle. These connections are placed, one in the attic, able to spread the water all over the roof; one hose in each dormitory, and one on each floor; also one in the basement and one in the engine-room.

We have on both ends of the building a fire-escape, running 5 feet from the ground to the dormitories, with platform at each floor and a door opening outside on each floor. All doors open outwards; there are three doors for each fire-escape and besides, there are four outside doors, all opening outwards. The school-room is provided with three doors, two opening on the boys' play-room and one on the passage, and all open outwards from the school-room.

The pump and engine are used to elevate the water required to supply the tanks in the attic; from thence it flows through a stand-pipe to the plumbing system and consequently is always ready for use. The pump can work against 400 feet head water.

The engine is set in motion by an electric spark and a full stream of water can be had in a few seconds. The engine is also provided with a dynamo and should a fire start in such a place that the engine could not be operated, we should still have the water pressure from the tanks and the hose, which is a pressure of 17½ pounds.

Heating and Lighting.—The building is heated entirely by steam at low pressure, which system gives great satisfaction. The school is lighted throughout by acetylene gas, the light-machine is in a proper room outside of the school. The matches are placed under control of the attendants.

Recreation.—The boys play lacrosse, football and baseball, which are their amusements during the summer. The girls have swings and play ball.

I have, &c.,

H. M. BRASSARD, O.M.I.,

Principal.

MANITOBA SUPERINTENDENCY,
KENORA BOARDING SCHOOL,
KENORA, ONT., April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of this school for the year ended March 31, 1908.

Location.—The school is situated at the northern end of the Lake of the Woods, about 2 miles from the town of Kenora.

Land.—The land connected with the school belongs to the congregation of the Oblate Fathers. It is registered as 1-8 township of Jaffrey. The soil is rocky and almost barren in some places. However, we can find sufficient ground for gardening and raising potatoes and other vegetables, but we are in need of land for pasturage.

Buildings.—The school buildings are of frame construction, with brick veneer. The main building is on a stone foundation, 36 x 30 feet, 3 storeys high, with an extension on the south end, 36 x 26 feet, 2 storeys high. The other buildings are: principal's residence, 20 x 16 feet, with a lean-to, 14 x 12 feet, resting on a stone foundation; laundry, storehouse, workshop (under one roof), 68 x 18 feet, stable, granary, carriage shed (under one roof), 48 x 18 feet, hen-house, 50 x 20 feet; boat-house, 24 x 18 feet; ice-house and wood-shed, 24 x 14 feet.

Accommodation.—There is room for about 45 pupils.

Attendance.—The attendance has been very good all the year.

Class-room Work.—The official programme of studies for Indian schools is followed as closely as possible. A careful method of recording merits and demerits is in use which extends to class work, politeness, cleanliness and general conduct; and an honour roll is made out at the end of each month, based on the record of the month. We find this system very good in encouraging emulation among the girls and boys, and I can say that, as a general rule, the children are doing well in their studies.

Farm and Garden.—All the farming and gardening work is done by the boys, helped sometimes by the school girls.

Industries Taught.—The boys are employed in cutting wood, gardening, farming, carpentry, and any other work which they are able to do.

The girls are taught general housework, cooking, baking, sewing, washing, ironing and dairying.

Moral and Religous Training.—Prayers are attended daily, both morning and evening, in the chapel. Each day, one hour is devoted to moral and religious training.

Health and Sanitation.—Two children died during the summer holidays of meningitis. They were perfectly well when they left the school, but they contracted their mortal sickness at home. The health of our pupils has been excellent all the year round.

Water Supply.—Our water-supply is drawn from the Lake of the Woods by means of a water cart.

Fire Protection.—We have 20 fire-extinguishers of different kinds; 6 fire-axes and fire-pails, hanging in convenient places, 2 exterior fire-escapes from all the dormitories, which reach nearly to the ground.

Heating.—The building is heated by 2 hot-air furnaces and 2 box stoves, and lighted by coal-oil lamps.

Recreation.—In winter the principal outdoor amusements for boys are, sleigh riding, skating and hockey. Our school boys have played advantageously hockey

matches at different times with the white boys of the public schools of the town. In summer they play baseball, football, &c. The girls amuse themselves with swinging, sleighing, playing dominoes, &c.

General Remarks.—I am pleased to state that this year has been successful in every respect, thanks to the zealous and intelligent co-operation of the staff.

In closing my report, I wish to thank Inspector Semmens, whose cheerful visits never fail to bring us a sunny day, and also our worthy agent, for the keen interest they take in our institution.

I have, &c.,
P. BOURQUET, O.M.I.,
Principal.

MANITOBA SUPERINTENDENCY—KEEWATIN TERRITORY,
NORWAY HOUSE BOARDING SCHOOL,
NORWAY HOUSE, May 26, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt General of Indian Affairs,
Ottawa.

SIR,—I have the honour of submitting the tenth annual report of the Norway House boarding school, for the year ended March 31, 1908.

Location.—The school is situated at Rossville mission, close to the edge of Norway House reserve. Its situation affords a fine view of Little Playgreen lake, from the narrows eastward. It is about 25 miles down the east branch of the Nelson river.

Land.—The school does not possess a legal title to any land, but is using about 2 acres as a garden. The land is a good heavy clay, and produces good crops of all kinds of vegetables. Grains of nearly every sort commonly grown by farmers do well here. It is, however, only found in small lots, being cut up by muskegs and rocks.

Buildings.—The main building is 100 x 40 feet, 2 storeys high. The top storey has two good-sized dormitories, a sewing-room, clothes-room, 5 bed-rooms and 3 isolated rooms for cases of sickness. There is a stable, a root-house, wood-shed, ice-house, a storehouse for tools, oil, paints, and odds and ends of which there are many, 3 out-houses, one class-room, and a boat-house.

Accommodation.—There is ample accommodation for 55 children and a staff of 6.

Attendance.—The attendance this year has been very satisfactory. Parents have brought 8 children to the school and offered them unsolicited for attendance. Others have been secured without difficulty. Those in attendance have been quite contented.

Class-room Work.—The course prescribed has been adhered to, and good progress made by the pupils.

Farm and Garden.—The school not owning any land, nothing has been attempted in the line of farming, except the raising of a few head of stock. The gardening done so far, very little more than supplies the staff with vegetables. The supply for the children is bought from the natives or brought in from other sources.

Industries Taught.—The girls are taught all ordinary household duties. The boys have a little training in gardening, carpentering, and care of cattle.

Moral and Religious Training.—Morning and evening worship, consisting of singing, reading scripture, and prayer, is held and besides we have a weekly class for boys and also one for girls. Sabbath school is held and usually a song service on Sunday, besides the regular attendance of all healthy pupils at the regular preaching services in the mission church, twice each Sabbath.

Health and Sanitation.—There has been quite a lot of sickness this year, though no deaths. This is no doubt due to the fact that there has been a good doctor here and a trained nurse on the school staff.

Water Supply.—All water is carried from the lake, which is only about 125 yards from the school.

Fire Protection.—We have 4 tubes of Eclipse fire-extinguishing powder, hung in different part of the school; one barrel in each play-room and 3 in the kitchen are kept full of water. Buckets and axes are also on hand for emergencies. Fire-drill has been commenced this year and the scholars have become sufficiently expert to rise from bed, fully dress, and be out of the building in 10 minutes.

Heating and Lighting.—The lighting has been done entirely by oil lamps. Three wood furnaces have been installed this year and have given much better satisfaction than previously secured.

Recreation.—Each child has at least four periods of recreation each day, the staff, as often as possible, conducting and encouraging them in their games. Skating and coasting are freely indulged in during winter. Football, rowing, walking and many other kinds of amusements are provided in summer.

I have, &c.,
J. A. LOUSLEY,
Principal.

PROVINCE OF MANITOBA,
PINE CREEK BOARDING SCHOOL,
CAMPERVILLE, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to make my annual report as follows:—

Location.—The Pine Creek boarding school is situated on the shore of Lake Winnipegosis, near the Pine Creek reserve. Camperville is the name of the post office.

Land.—This consists of 160 acres of land and is private property. It comprises section 1, township 35, range 19, west of the first meridian; also the south part of section 34, township 34, range 20, west of the first meridian, the property of the Rev. Oblate Fathers, is used as hay-land.

Buildings.—The school-house is a stone building, 115 x 45 feet inside measurements. It is divided as follows: in the basement are the kitchen, 22 x 16 feet; the refectory, 46 x 22 feet; the wash-room, 30 x 29 feet; the store-room, 30 x 22 feet; the dairy, 20 x 13 feet; the cellar, 34 x 22 feet; the boiler-room, 26 x 20 feet; the pantry, 10 x 10 feet; the baking-room, 22 x 16 feet; the refectory for the female staff, 16 x 16 feet.

On the first floor are 2 class-rooms, one for the boys, 23 x 22 feet, and one for the girls, 23 x 22 feet; 2 recreation halls, 23 x 22 feet respectively, and 7 private rooms and a parlour.

On the second floor are the infirmaries, one for the boys, 17 x 15 feet, one for the girls, 17 x 15 feet; the sewing-room, 20 x 15 feet; 5 rooms for female staff and a chapel.

In the attic are two dormitories, one for the boys, 49 x 45 feet, and one for the girls of the same size, and 2 rooms for the night guardians, each 15 x 14 feet.

There is a stable, 100 x 59 feet, a saw-mill and carpenter shop, 30 x 30 feet, a shed, 115 x 18 feet, an ice-house, 20 x 16 feet.

Attendance.—The attendance is very good.

Class-room Work.—Most of the pupils are anxious to learn, and they do all in their power to meet the wishes of their teachers.

Farm and Garden.—Ten acres of land are under cultivation. Vegetables are the principal products.

Industries Taught.—The boys are taught light housework, care of horses and cattle and farming. The girls are taught sewing, knitting, cooking, baking, dairying and care of poultry.

Moral and Religious Training.—Every day one half hour is devoted to moral and religious training.

Health and Sanitation.—All the boarders generally enjoy good health. The house is large and well aired. The children have substantial food, and exercise is never wanting.

Water Supply.—A windmill draws the water from the river.

Fire Protection.—There are two outside fire-escapes, iron stairs and wooden stairs. Besides, on each floor there is a hose, 4 pails and 2 axes.

Heating and Lighting.—The school is heated by steam. It is very satisfactory. Lamps and kerosene are used for lighting.

I have, &c.,
A. CHAUMONT,
Principal.

PROVINCE OF MANITOBA,
PORTAGE LA PRAIRIE BOARDING SCHOOL,
PORTAGE LA PRAIRIE, April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to forward my annual report for the year ended March 31, 1908.

Location.—This school, which is situated about a quarter of a mile east of the city of Portage la Prairie, is not on a reserve.

Land.—There are 2 acres of land in connection with the school. This land is within the corporation of the city, and is owned by the Presbyterian Church. It is very suitable for garden purposes.

Buildings.—The building is of frame on a stone foundation, with a school-room adjoining. Last spring two large rooms were opened up in the attic and are used as isolated wards. A new stable was also built, and this spring we hope to have a new poultry-house.

Accommodation.—The school can accommodate 30 pupils with a staff of 4.

Attendance.—The attendance has been very satisfactory in every way. Our average has been 26 pupils during the year.

Class-room Work.—The majority of the children being under 12 years, they are not in advanced standards, but their progress has been fair. The children speak English entirely while in school. They express themselves better in English than in their own language. The grading of the pupils is as follows:—

	Pupils.
Standard I.	9
" II.	6
" III.	3
" IV.	5
" V.	1
" VI.	1
Total.	25

Farm and Garden.—One acre is used for garden; the other is divided into two playgrounds, one for the boys and one for the girls. We purchased two cows and a horse, which we find a great help in many ways.

Industries Taught.—In the house the girls have been carefully trained in habits of neatness and industry, in the kitchen and laundry, also in sewing and general housework. The boys are employed in cutting wood, gardening, carpentry and stable work.

Moral and Religious Training.—Thirty minutes in the morning and in the evening is devoted to religious instruction. The pupils attend the services and Sunday school of Knox church. The conduct of the children has been very good.

Health and Sanitation.—The health of the children has been good. We have had no sickness of any kind. The ventilation of the school is not all it might be.

Water Supply.—There is a good well which is sufficient for the needs of the school. There is also a soft water tank in the basement which will hold 20 barrels.

Fire Protection.—There are a number of exits should fire occur. Our proximity to the town, with a telephone in the building, strengthens our fire-protection, as we can make use of the town fire brigade.

Heating and Lighting.—The school is heated by hot air and lighted by electricity.

Recreation.—The girls have many games in summer, and skating in winter. The boys have baseball, football, tennis, skating and other athletic sports.

I have, &c.,
W. A. HENDRY,
Principal.

PROVINCE OF MANITOBA,
SANDY BAY BOARDING SCHOOL,
SANDY BAY, April 8, 1908

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location.—The school is situated in the centre of Sandy Bay reserve, on the west shore of Lake Manitoba.

Land.—The land, which comprises 100 acres, has been given by the Sandy Bay band. There are about 50 acres cleared, 20 of which are under cultivation.

Buildings.—The school is a 3 storey frame building, 70 x 40 feet, with a stone foundation. In the basement are the dining halls, kitchen, lavatory and shoemaker shop; on the first floor, class-room, boys' play-room, chapel, principal's room and an extra room; on the second floor are the infirmaries, nuns' quarters, sewing-room, girls' play-room. The third floor contains the dormitories. There is an annex used as a general workshop, part of which is occupied by a gasolene engine and a gas plant. Besides these buildings there are 3 stables, a storehouse, 2 implement sheds and a new ice-house, 14 x 16 feet, recently built.

Accommodation.—Accommodation can be provided for 50 pupils and a staff of 10.

Attendance.—The attendance has been regular. The present enrolment is 50. The grant provides for 42 pupils.

Class-room Work.—The programme of studies prescribed by the department is followed as closely as possible and the progress has been good.

Farm and Garden.—We have about 20 acres under cultivation. We have raised 1,000 bushels of potatoes, besides many other vegetables.

Industries Taught.—The boys are taught all the work that can be useful to them, such as farming, gardening, sawing and splitting fuel and the care of cattle and horses. The older boys are taught shoe-repairing and carpentry. The girls are instructed in the various branches of housekeeping, sewing, knitting, mending, laundry and kitchen work.

Moral and Religious Training.—Our pupils receive special attention in this branch of education, and their conduct and general behaviour are most satisfactory.

Health and Sanitation.—The health of the pupils has been good. The building is well ventilated, the sanitary arrangements are looked after carefully and the premises are kept clean.

Water Supply.—We have a good well for general use and a rain-water cistern for laundry use.

Fire Protection.—There are 2 fire-escapes from the dormitories, and hose connections on each floor with tanks in the attic. We also have 10 fire-extinguishers placed throughout the building.

Heating and Lighting.—The school is heated by steam and lighted by acetylene gas.

Recreation.—The boys are greatly interested in outdoor games, football and skating being their chief amusements. The girls enjoy long walks in suitable weather. Crokinole, parchesi, checkers, skipping-ropes and doll-dressing are also favourite pastimes.

Ex-pupils.—Our discharged pupils are doing well and continue to have a high esteem for their old home. One girl who is now married profits by the lessons she learnt at school to keep her house neat and tidy. One of the boys is working with his father, being a great help to him on account of his steadiness and ability.

I have, &c.,

G. LEONARD, O.M.I.,

Principal.

PROVINCE OF MANITOBA,

BRANDON INDUSTRIAL SCHOOL,

BRANDON, March 31, 1908.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—I have the honour to submit my report of the Brandon industrial school for the year ended March 31, 1908.

Location.—The school, which is not on a reservation, is very beautifully situated, about 3 miles northwest of the city of Brandon, about the centre of the hill that once formed the north bank of the Assiniboine river. It commands a fine view of the valley, the experimental farm, Brandon city and the country lying to the south.

Land.—The farm connected with the school contains 320 acres of land, being the east half of section 28, township 10, range 19. About 220 acres lies in the valley and is most excellent land for agriculture and gardening. That portion on the hillside is used for the buildings, playgrounds and pasture.

Buildings.—The main building with 102 feet frontage, brick veneered, originally T shaped, is 3 storeys, with basement and a 2 storey addition extending to the west across the rear. It contains offices, officers' rooms, dormitories, school-rooms, dining-rooms, sewing-room, kitchen, laundry, play-rooms, store-rooms, sick-room, &c. The other buildings are: residences for the principal, assistant principal and farmer, barn, stables, piggery, hennery, carpenter-shop, ice-house and 2 root-houses.

Accommodation.—There is accommodation for 125 pupils and staff.

Attendance.—The average attendance for the year has been 100, with 5 non-pay-pupils.

Class-room Work.—The half-day system is followed, except in the case of some of the smaller pupils, who usually attend all day, especially during the winter.

The authorized programme of studies is followed and the results in this department have been very satisfactory. The pupils are graded as follows:—

Standard	I—	7	girls	5	boys—total	12
"	II—	9	"	5	" "	14
"	III—	18	"	23	" "	41
"	IV—	5	"	10	" "	15
"	V—	4	"	6	" "	10
"	VI—	1	"	2	" "	3
Totals....		44		51		95

Farm and Garden.—Special attention is given to these two departments. Under competent instructors we believe the Indian of the future must make his living from the soil and stock-raising. We have under cultivation 163 acres with the following acreage: wheat, 35 acres; oats, 31 acres; barley, 6 acres; corn, 9 acres; potatoes, 10 acres; turnips, 4 acres; mangolds and sugar beets, 2 acres; fruit bushes, 2 acres; garden, 3 acres; rye and timothy, 16 acres; alfalfa, 8 acres, clover and timothy, 7 acres; summer fallow, 25 acres; and 5 acres of rye sod.

Industries Taught.—The boys are taught farming, gardening, care of stock and poultry, carpenter work and several other duties required to keep the institution in a good state of repair. The girls are taught cooking, laundry work, dairy work, sewing and general housework. Thoroughness is required in every department by the instructors, quality aimed at rather than quantity.

Moral and Religious Training.—Sabbath morning the boys and many of the girls attend divine service in the city of Brandon. Sabbath school is held every Sunday afternoon, each member of the staff teaching a class. Preaching service is conducted every Sunday evening in the institute; prayer service every morning and evening during the week.

Health and Sanitation.—The general health of the children has been exceptionally good. Dr. Fraser, the school physician, has faithfully attended to any who were sick. The building is kept scrupulously clean in every part and the ventilation is excellent and the building well plumbed.

Water Supply.—This consists of good spring-water from a well in the hillside, pumped by a windmill into a large tank on the top of the building and conveyed by means of pipes to all parts of the institution. This supply needs to be supplemented by another well which can be pumped by electric power which is installed in the building.

Fire Protection.—A large McRobie engine is installed with sufficient hose on each flat to reach any part of the same. The water in the tank is also pumped with hose on every flat. We have fire-escapes from all the large dormitories.

Heating and Lighting.—The main building is heated by warm air from 3 large wood and 2 coal furnaces. All these are so installed that a large volume of pure fresh air is constantly flowing into the building; while 3 large shafts provide for the exit of the foul air, thus keeping the air pure and fresh. The main building, principal's home, farmer's home and barn, are all lighted by electricity, derived from Brandon.

Recreation.—The favourite outdoor sports are running, jumping, football, cricket, baseball, marbles, skating, coasting, swinging, skipping, &c. An effort is made to keep them well supplied with all indoor games. Our boys have won several silver trophies in intercollegiate contests.

General Remarks.—During the year a number of pupils have been discharged, five being sent to the File Hills colony, and a number of new pupils admitted. The

progress in the school-rooms and industrial departments has been very satisfactory; the pupils taking a great interest in their study and work. The farm and garden have been a good training school for the boys and a great help in supplying provisions for the institute. The pupils have been contented, cheerful and obedient.

We are grateful for the successful year and for the continued courtesy and goodwill of the officers of the Methodist Missionary Society and of the Indian Department.

I have, &c.,

T. FERRIER,
Principal.

PROVINCE OF MANITOBA,
ELKHORN INDUSTRIAL SCHOOL,
ELKHORN, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location.—The building which we have now occupied since September 7, 1899, is situated about a quarter of a mile from the town of Elkhorn, and stands in about the centre of what was formerly known as the 'Gore,' a level piece of turf some 42 acres in extent, bounded on the north by the Canadian Pacific railway main line, and on the south by a fence running along the public road allowance. West of this, and immediately adjoining it, lies our farm of about 320 acres, being the southwest quarter of section 4, and the southeast quarter of section 5, township 12, range 28, which contains excellent pasturage and wheat land, though the latter is rather cut up by sloughs, in addition to which the department purchased 20 acres of good hay-land adjacent to the 'Gore,' all of which is owned by the Dominion government.

Buildings.—These comprise the main building, the principal's residence, the laundry, the gymnasium, (the last named containing the carpenter's and paint-shop and band-room) horse and cow stables, root-house, granary, implement-shed, boys' and girls' outhouses, and coal-shed. There is also a small frame building covering the pump and sewage tank with which is connected a windmill used in emptying the tank. Last year a small annex was erected in the southwest angle of the school, in which to place the gasolene engine.

In July last, a new dairy, 17 x 12 feet, was built on the northwest corner of the kitchen, of stone, with ample air space and ventilation, and was found very satisfactory, the yield of butter being largely increased with no loss of milk through souring.

In October a chicken-house, 20 x 14 feet, was completed, affording long needed accommodation for the poultry, and this has also proved very serviceable.

All buildings are in good repair and the school is thoroughly clean.

The roof and top floor window frames were all painted last summer, and the greater part of the interior was also painted instead of kalsomined, as being more sanitary.

Accommodation.—There is accommodation for 100 pupils and 15 of a staff.

Attendance.—The attendance was 92 a year ago. It dropped to 65 in August, and is now 83 pupils.

Class-room Work.—The standard of excellence in this department is being fully maintained.

Last June, the silver medal annually presented by Mrs. Wilson to standard VI was won by No. 0.110, Sarah Cook, with a general percentage of 88 per cent, and in standard V, No. 246, John Thomas, with 85 per cent, was awarded the silver medal presented by myself.

The usual evening classes from 7.45 to 8.30, have been held during the winter except on Saturday nights.

The curriculum embraces reading, writing, arithmetic, grammar, spelling, composition, literature, history (principally Canadian), and vocal exercise.

The present attendance is as follows:—

	Pupils.
Standard I	11
" II	24
" III	13
" IV	19
" V	11
" VI	5
Total	83

There were 14 promotions from standard I to II, and in standard VI, 4 boys and 1 girl are working for the high school entrance examination.

Farm and Garden.—This is the principal part of the industrial training, as being the occupation best suited to the health and environments of the Indian as a rule.

The 9 pupils in this department are very thoroughly instructed in the use and care of the tools and implements, the proper methods of handling the live stock and in fact everything pertaining to agriculture that our facilities admit of.

Our live stock consists of 2 farm teams, one light team, 14 cows, a bull, a boar, 2 yearlings, 4 calves and 3 pigs, all in very good condition.

We have an ample supply of milk, a very important item in the children's dietary, also butter and eggs, and we killed 6 pigs this winter. With the new dairy and hennery we may expect still better returns.

Our seeding was very late this year, but the crops turned out very well, no damage being done by frost. Potatoes and roots generally, were a splendid turnout.

Grain returns were: wheat, 1,100 bushels; oats, 820 bushels; barley, 282 bushels; a total of 2,202 bushels, and they averaged a little over 20 bushels to the acre.

Root crop returns from farm and gardens into storage were: turnips, 500 bushels; carrots, 54 bushels; beets, 10 bushels; potatoes, 564 bushels; mangolds, 125 bushels; and other vegetables in smaller quantities including 3 loads of cabbage, and we had a full supply of everything all summer.

Our school garden was not ploughed till May 26, but results were even better than last year, except that onions were too late to mature.

Industries Taught.—In addition to the above, we also have a carpenter's shop, where the pupils acquire a practical knowledge of carpentering, besides painting, plumbing and repair work generally, and all our construction work, except stonework and bricklaying, is done by this department.

In the grounds, some 700 willow cuttings and 300 maple and ash were set in the border along our drive. Of annual flowers we raised and set out some ten thousand, making a fine show.

This year I adopted the plan of giving several of the smaller boys gardens of their own. Ten boys had ten square yards each, and the results passed my expectations. They had to spade up the prairie into garden and though through extreme lateness their produce did not all mature, results were very good; while for neatness they could not be surpassed. Apart from instruction and suggestion from the supervisor they were left to their own devices.

In addition to these, several pupils are learning trades in town with the best results; 3 boys are in the blacksmith's shop, 1 shoemaking, 1 harnessmaking, 1 milling and one tinsmithing.

The smaller boys are employed in the gardens and grounds and do the necessary chores, and also keep their own part of the building clean and tidy.

The girls are instructed in the regular routine housework, including washing, cooking, baking bread, &c., and also in dressmaking, sewing and mending; all their own and most of the boys' underclothing being made in this department.

Moral and Religious Training.—The proper inculcation of moral principles is the chief part of this work, and is effected by attendance at church and Sunday school, by daily prayers, and above all, by example.

The pupils attend St. Mark's church, about half a mile away, twice every Sunday, where also the seniors attend Sunday school, while daily prayers are held in the dining-hall after breakfast and supper, with occasional addresses by visitors, clerical and lay.

Sunday school classes for the juniors are held in the school, instruction being given by the members of my staff.

I am well satisfied with our moral standard in the school. Exceptions we have, of course, but they are fortunately few, and their bad influence is outweighed by the influence for good of the other pupils, and I am confirmed in this by those with whom they are constantly in contact, and by residents of the town and elsewhere.

Health and Sanitation.—Thorough ventilation has always been considered as of vital importance. While our ventilating appliances are fairly good elsewhere, we find that in the dormitories the wide opening of the windows on the lee side at night with a smaller aperture at the top on the weather side in winter is a very efficient method, the air being kept pure without appreciable draught or low temperature. This is seen to, the last thing at night. All dormitory appliances are carefully washed, rinsed and disinfected with bi-chloride of mercury every day of the year. Sick-room appliances are similarly dealt with.

As far as possible all rubbish is consumed in the furnace and what cannot be burnt together with the ashes, is daily removed from the premises, except on Sundays, to a distance from the main building, so that there is no accumulation at the kitchen door. The cleaning up of the back yard and general surroundings, is as far as possible, a part of the daily routine, after the snow begins to go.

With regard to the outhouses, I had the arrangements remodelled last October in accordance with suggestions from Inspectors Semmens and Swinford, and they have proved entirely satisfactory all winter.

There is an ample supply of hot water for bathing from a special heater for the purpose and each pupil has a bath at the week end, unless excused by medical authority. There are 4 large enamelled iron baths, 2 in each department.

Tubercular disease is generally admitted to be the main trouble we have to contend with. During the year we have had 2 cases of tuberculosis, 4 cases of tubercular glands, of which two are quite recovered and one nearly so, while one boy had tubercular necrosis of the bones of both hands. It was expected that he would lose them, but after an operation he commenced to improve rapidly and is now nearly well.

In every case of disease with even a suggestion of contagion, the pupil is at once isolated and on release all the belongings, if not burnt, are thoroughly disinfected under the supervision of an experienced nurse.

We have had no deaths in the school during the year.

Drainage.—At present all waste water from all premises is conveyed by a covered tile drain to a large steel tank underground, whence it is pumped by a windmill to a distant point on the prairie. Improvements in this connection are under discussion by the department.

In December, the department sent us a 10 horse-power gasolene engine from the Ruperts Land industrial school, to be installed in connection with the drainage, but it was found to be too late in the year to mount it on a proper foundation.

Outhouses for both sexes are at a safe distance from all buildings and from the water-supply.

Water Supply.—Our well, in connection with the 1½ horse-power gasolene engine, gives us an ample supply of very good water. The engine pumps it up to storage tanks on the top floor, whence it supplies each storey, or direct into drains as may be required.

Fire Protection.—We are safeguarded from fire by a McRobie chemical fire-engine in the basement, with connections and hose on each floor, together with 2 Babcock, 6 Stempel and 24 Eclipse extinguishers distributed throughout the building. Fire-escapes are fitted in the rear of each wing with access from every floor and a fire-axe outside each dormitory.

Heating and Lighting.—The school is warmed by hot water, transmitted direct to vertical radiators from a 12 foot tubular boiler. It was found necessary to add still more radiation to the school-rooms.

Pennsylvania hard coal was burned until Christmas, when tamarack was substituted, which entails more work but is in every way more efficient and economical, while it allows us to dispose of nearly all our rubbish by burning, and the residue is available for fertilizer.

In July an acetylene plant of 100 light capacity was installed, which gives good satisfaction. It supplies the main building, the principal's house, the carpenter's shop and the laundry.

In this connection, I think it may be safely assumed that, had the building not been so effectively lighted, the results in the recent fire might have been different.

Recreation.—Football continues to be our principal boys' game, but they also have baseball and other games in proper hours. We have a good football ground and our team won one tournament and was very successful in the league. We also have tennis for both sexes, with a very good tennis court.

The girls also have their own football, croquet, swings and other amusements and in the summer they are frequently taken for walks by the lady members of the staff.

In the winter, the boys have their gymnasium, warmed by a wood stove, while the girls have a play-room in the main building.

A skating rink was opened in the town this winter and the management very kindly gave 20 season tickets for the pupils, which were much appreciated. Our school team won the local hockey tournament.

Though still without a regular instructor, the band continues to maintain it efficiency under the leadership of one of the senior boys, and filled several engagements during the summer very creditably, in fact, I was compelled to refuse several applications for their services, lest the school work should be encroached upon.

General Remarks.—Our first visitor this year was Dr. Bryce, the principal medical officer of the department, who inspectd the whole school on April 24. His visit was made at a time when we have most to contend with in the way of sanitation, but he expressed himself as thoroughly satisfied.

On August 8, the girls' camp opened on the Pipestone creek, about 12 miles west. They spent two weeks there and were followed on the 23rd by the boys, who returned on the 29th. The weather was latterly unpropitious, but the reports of the medical officer for September and October are evidence of the benefit derived, there being nothing to report except casualties due to football and the case of tubercular necrosis above referred to.

On March 17, at 11 p.m., there was an alarm of fire in the nurse's bed-room. The McRobie fire-apparatus was at work in less than one minute and all the 83 pupils awakened and got down stairs in less than 3 minutes.

All the fire-appliances were in order and did effective work. The McRobie apparatus was re-charged twice and the Babcock over and over again.

The fire when discovered had made great headway and matters at first looked

hopeless, but by steady systematic effort it was got under control by 11.30 p.m. and out by 12.30.

Complete order and quiet was maintained throughout, the discipline being perfect. Most of the stores and blankets were taken out during the fire. By 1.30 everything was back in the building and the pupils were in bed again.

The saving of the building is due to the cool-headed energy of several of my staff.

It is with deep feelings of thankfulness to Divine Providence for the many mercies vouchsafed to us during the past year that I bring my report to a close.

I have, &c.,

A. E. WILSON,
Principal.

PROVINCE OF MANITOBA,
LAKE MANITOBA INSPECTORATE,
PORTAGE LA PRAIRIE, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to submit the following report of the inspection of the industrial and boarding schools in my inspectorate, that I have visited.

ELKHORN INDUSTRIAL SCHOOL.

I visited this school and completed my inspection during the last week in October, 1907.

The staff consists of: principal, A. E. Wilson; assistant principal, Mrs. Wilson; supervisor, Louis Ingram; matron, Miss E. M Vidal; nurse and head seamstress, Miss J. Cameron; assistant seamstress, Miss M. Clunas; teacher, Miss M. N. Middleton; assistant teacher, Miss A. J. Baldwin; cook, Miss C. Stanway; assistant cook, Miss M. McNaughton; laundress, Miss S. C. Favel; farmer, T. T. Smith; carpenter, James Goldie; gardener, G. Barrett; physician, M. Goodwin, M.D.

There were 67 pupils enrolled at the time of my visit, classified as follows:—

Standard I.	21	pupils.
" II.	8	"
" III.	9	"
" IV.	17	"
" V.	8	"
" VI.	4	"
	67	"

Classes I, II, III, IV, constitute the junior room, and classes V and VI, the senior. In the junior room the pupils attend both morning and afternoon, but in the senior room half the pupils attend in the morning and the other half in the afternoon, the other half day being applied to farming, trades, and housekeeping. The classroom work is all that could be desired; both teachers hold professional certificates and have taught with success in public schools.

The buildings are in fair repair, much painting has been done by the pupils under the supervision of the carpenter, and the result adds greatly to the general prospect. The main building is heated by the hot-water system with one large boiler, and so

far has been satisfactory. All building are lighted by an acetylene gas plant, which has been installed during the past year, and it is giving satisfaction.

On the farm they have 85 acres under grain crop and 45 acres was summer-fallowed. The result of the crop was about 2,200 bushels of grain and 1,200 bushels of roots.

In the way of live stock they have 24 cattle, 6 horses, 9 pigs, and 80 poultry.

There appeared to be sufficient implements and tools to carry on the work of the farm, and the land showed that it was well attended to.

There has been considerable trouble in regard to disposing of the sewage. The whole district is so flat that it has not been possible to get drainage, and it may be that to get the best results a system of septic tanks will have to be installed.

There is a plentiful supply of good water to be obtained here from wells, and for fire-protection they have fire-escapes, the McRobie system of fire-extinguisher, and a number of smaller fire-extinguishers scattered over the building.

BRANDON INDUSTRIAL SCHOOL.

I visited this school during the first week in November, 1907. The weather was warm and beautiful and I had a good opportunity of seeing the work that had been done on the farm and garden.

The staff consists of: principal, Rev. T. Ferrier; assistant principal, Rev. D. R. Patterson; farmer, H. Goodland; gardener, M. Cole; matron, Miss H. Sutherland; assistant matron, Miss A. E. Drummond; teacher, Miss A. Pipes; teacher, Miss L. P. McGill; cook, Miss C. Thompson; laundress, Miss E. Knight; the positions of seamstress and carpenter were vacant. They are all good strong-minded, capable people, well qualified to fill the duties of their various positions.

There were 94 pupils enrolled, 51 boys and 43 girls, classified as follows:—

Standard	I	9 boys.	16 girls.
"	II	14 "	14 "
"	III	10 "	3 "
"	IV	11 "	6 "
"	V	5 "	3 "
"	VI	2 "	1 "
		51 "	43 "

The senior pupils attend school half a day and work the other half. Their reading, writing and spelling were good, and arithmetic in the higher grades was most creditable. In map-drawing a few of the elder pupils show decided ability, and some of the girls are being instructed in painting maps and flowers. There is a tremendous difference intellectually between Indian pupils. One will appear to be dull, and uninterested as though the mind were dormant, while another is perfectly bright, interested, and shows good groundwork for future development. The children all appeared to be in good health, and the hospital ward was empty.

The building is heated with hot-air furnaces and there are two hot-water heaters for the bath-room and laundry. Slabs are used for fuel in the furnaces and anthracite coal in the water heaters.

The Smead-Dowd system of ventilation is in operation here and is giving satisfaction. I found the rooms rather chilly for my own comfort, but I know from experience that Indian children do not appreciate or require as high a temperature as white people.

For fire-protection there are iron fire-escapes on the outside of the building. The McRobie fire-extinguisher is installed, and there is also a stand-pipe from the tank at the top running down through the centre of the building, both systems having hose on each floor.

The main building, principal's house, barn and stable, are all lighted by electricity supplied by the Brandon city plant.

The buildings are all in a state of good repair. The farm buildings are very compact and convenient in every way. The horses and cattle being under the same roof as the hay, feed-corn, chop, turnips and water, they can be fed and attended to without going outside.

The farm had 109 acres in grain, and about 21 acres in root crop last year, from which they had derived 2,956 bushels of grain and 5,049 bushels of roots, besides 49 tons of hay and 15 tons of feed corn.

The live stock consists of 1 bull, 18 cows, 4 young cattle, 2 calves, 5 three-year old steers for beef, 3 teams of work horses, 2 driving horses, 4 brood sows, 8 young pigs, 9 sucking pigs and 7 pigs just sold weighing 1,630 pounds, and 242 head of poultry, from which they had received about 8,000 eggs, in addition to fowl meat.

From the garden have been received 375 pounds of currants, 202 pounds of raspberries, 1,055 cabbages, 500 cauliflowers, 85 red cabbages, 88 bushels of beets, 41 bushels of onions and a quantity of citrons, squashes, tomatoes, parsnips, beans, pease, corn, celery and rhubarb.

The soil of both farm and garden is very rich and productive, and as all the buildings are situated on an elevated plateau on the north side of the valley of the Assiniboine, there is no possibility of any trouble arising from defective drainage.

BIRTLE BOARDING SCHOOL.

I completed my inspection of this school on March 20, 1908.

The staff consists of: principal, Rev. W. W. McLaren; matron, Miss A. McLaren; assistant matron, Miss T. McLeod; second assistant matron, Miss W. Tansley; teacher, Miss E. McGregor; farmer, Mr. H. Stewart.

The principal has been in charge of the institution about 3 years and has made many improvements. He is enthusiastic, and this combined with discretion has enabled him to carry on the work of the school successfully. He is also missionary to the band of Sioux on the Birdtail Creek reserve. The other members of the staff are all doing excellent work in their various departments.

The school building is in good repair, and during the past year, a system of inside water-closets, basins, and baths has been installed, much to the additional comfort of both pupils and staff. The heating apparatus consists of three hot-air furnaces, and a hot-water coal-burning furnace for heating the basement and part of first floor, and another water heater for the baths and laundry. The heating has been satisfactory this winter, but I rather doubt its efficiency in a severe winter. The water-supply is not sufficient and something will have to be done in the near future to improve this.

Twenty-five acres were under crop in 1907, from which they derived sufficient vegetables to last them all winter, and feed for the live stock. They have now 15 acres of new land broken and ready for crop, and intend buying 160 acres of land, about 2 miles north of the school.

The live stock consists of 5 cows, 1 steer, 2 years old; 4 yearling heifers, 3 heifer calves, 2 work horses, 2 driving horses, 2 brood sows, 2 barrow pigs, and 50 fowl. They have also killed 4 steers for beef during the winter.

There are sufficient implements on hand to work the land now under cultivation; also a gasolene engine to pump water and saw wood.

The whole building is lighted by acetylene gas supplied by the town of Birtle. It is cheap and satisfactory. The fire-appliances consist of a tank in the attic, and a stand-pipe with hose attached on each floor, fire-pails kept full of water, fire-axes, and a force-pump on the top floor, with hose attached to contend with fire on the roof. The principal has also installed a system of electric bells all over the school that can be rung from the office. I sounded the alarm and everybody was out of the building

in 2 minutes, with the exception of the older boys, who had the hose stretched ready for the fire.

There are 48 pupils enrolled, 27 girls, and 21 boys, and they were all present except one boy at the tent hospital. They were classified as follows:—

Standard I	11	pupils.
" II	10	"
" III	10	"
" IV	10	"
" V	7	"
	48	"

The class-room is very pleasant and comfortable in every way. The children showed intelligence in writing, arithmetic, dictation, and spelling. They also showed considerable knowledge of newspaper events and general information of the day. The larger girls and boys spend half of the day in the class-room and half at other work, the boys helping on the farm and garden, and the girls in the kitchen and sewing-room.

The children were all well clothed and the principal informed me their health had been remarkably good. Six had been operated upon at the tent hospital for tubercular glands in the throat and the operations were all successful.

PORTAGE LA PRAIRIE BOARDING SCHOOL.

The staff consists of: principal, Mr. W. A. Hendry, B.A.; matron, Mrs. Hendry; assistant matron, Miss Hendry.

Mr. Hendry acts as teacher, and looks after the spiritual welfare of the Indians at the Sioux village. He is thoroughly qualified to develop the varied dispositions of Indian children and has their perfect respect without fear. Mrs. Hendry is a trained nurse and her skill has prevented many visits of the doctor. Miss Hendry supervises the work in the kitchen and dining-room. They sometimes exchange duties or relieve each other, and as they work in perfect harmony and union they make a strong staff.

They receive a grant for 25 pupils, and I found the full number on hand, 16 girls and 9 boys.

They were graded as follows:—

Standard I	3	boys.	6	girls.
" II	0	"	6	"
" III	2	"	1	"
" IV	2	"	3	"
" V	2	"	0	"

The class work was good, all the pupils understanding English perfectly, and showed a pleasant willingness to try and work out, or answer questions given to them.

The pupils of standards IV and V are sufficiently advanced in arithmetic to work out problems that require a great deal of mental reasoning. The children who enter the schools under 10 years of age, appear to develop the faculty of reasoning better than those who enter later in life. One pupil, Peter Ross, No. 23, shown as standard V, is attending the Collegiate in the city, and holding his own with the best of them there.

The health of the pupils has been exceptionally good, and although it is usual in the spring to see several pupils with tubercular glands of the neck, swelling up and breaking out, there are none this year. The principal cannot account for this in any way, except that he has varied the food as much as possible and given much more milk and eggs than usual. He has also removed all window blinds and allowed full window sunlight in the school-room and dormitories, and plenty of fresh air all the time. time.

The main building has all been painted since last inspection, and looks well. A new stable to hold two cows and a horse has been built and painted. There is a loft overhead, and a carriage-shed built on the back. In the main school building two new rooms have been opened in the attic, for a sick ward and attendant's room. They are plastered, painted, heated with hot air, ventilated, and have electric lights.

The main building is heated with a hot-air furnace incased in brick. It takes its supply of air from both outside and in, and the principal says it gives satisfaction.

The water-supply is obtained from a well outside the building and it looks and tastes good. There is also a galvanized iron tank holding 20 barrels, in the basement for rain-water, and a small tank holding 2 barrels, in the attic for the bath-room supply, the water being conveyed there by force pump.

The whole building is lighted by electricity supplied from the city, and it is economical and satisfactory.

For fire protection there are tow Babcock chemical fire-extinguishers, one axe and six fire-pails, kept ready for action. The building is well within the city limits and has the protection of the fire department.

The big girls all assist in washing clothes, mending, and take turn about at working in the kitchen, cooking, baking and dish-washing. All the bread for the pupils is baked in the building. The boys do the work around the stable, and in the garden, cut and carry the fuel, and do other small chores.

The administration of the institution is in every way satisfactory. It is financed carefully, and every quarter there is a small credit balance, and all accounts are paid up at the end of the year.

GENERAL REMARKS.

As I was appointed to the inspectorate only in September, 1907, I have not yet visited the boarding schools at Sandy Bay and Pine Creek, in the Manitowapah agency, but I expect to do so in July next.

I have, &c.,

S. SWINFORD,
Inspector of Indian Agencies.

PROVINCE OF MANITOBA,
LAKE WINNIPEG AND KENORA INSPECTORATE,
STONEWALL, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit a report showing the status of the schools which I have visited during the past year.

ELKHORN INDUSTRIAL SCHOOL (UNDENOMINATIONAL).

This school was inspected, May 3 to 13, 1907. The 15 members of staff engaged seemed to be united, cheerful, enthusiastic, efficient and successful.

The principal has been in charge 17 years. The assistant principal has held office for 18 years. The farmer has been on duty for 8 years and the teacher 8 years. Other members of the staff have been a long time on duty and these long periods of service have given them special fitness for their respective duties.

On the occasion of my visit there were 92 pupils in attendance; 41 girls and 51 boys.

The average attendance for the year was 92, there being in all 100 on the roll, some of whom were in the hospital in Winnipeg and some had returned to their homes.

There were 77 treaty children and 15 non-treaty. The pupils in attendance were classified as follows:—

Standard	I	20 pupils.
"	II	8 "
"	III	17 "
"	IV	26 "
"	V	15 "
"	VI	6 "
Total		92

The school curriculum includes the following subjects:—

Reading, writing, spelling, grammar, arithmetic, composition, geography, literature, drawing and Canadian history.

The health of the school was good at the time of my visit, only one pupil being in a somewhat enfeebled condition.

Two deaths had occurred during the year and several un-classified pupils were in a hospital in Winnipeg.

I found the heating apparatus in excellent condition. There was an abundant supply of water kept on hand for emergencies. Sufficient hose connections had been provided as protection against fire.

I thought the drainage system imperfect, and suggested some improved method for the sake of the general health.

I objected to the closets in use, *in toto,* and recommended certain improvements.

The crops of the previous year were as follows:—

Oats, 1,260 bushels; wheat, 911 bushels; barley, 190 bushels, and a large quantity of vegetables.

The building was clean from basement to garret.

The form of prayers prescribed is that of the Church of England. It is, however, more national than denominational, and visitors of all the religious bodies are cordially welcomed.

The value of all the cardinal virtues is much emphasized. Doctrinal teaching is not introduced, but practical every day religion is persistently taught.

The institution, speaking generally, appeared to be well managed.

The pupils are very strongly attached to their temporary home and have great respect for the officers in charge.

CECILIA JEFFREY BOARDING SCHOOL (Presbyterian).

This school was inspected, February 20 to 21, 1908. Every member of the staff had been changed since my last visit, and all were new to the work in which they were engaged.

The total attendance of pupils was 33, and of these 19 were boys and 14 girls.

The pupils were classified as follows:—

Standard	I	13 boys.	6 girls.
"	II	3 "	3 "
"	III	2 "	3 "
"	IV	1 "	2 "
Total		19	14

The school is situated on the shore of Shoal lake, in New Ontario.

A number of the pupils well up in their classes last visit were not in attendance this year. However, the examination in reading and spelling was fairly satisfactory.

The usual good health of the school had been followed by serious sickness which had resulted in the death of three of the pupils, but at the time of inspection all the children were in good health.

The food set on the table was simple and wholesome, well cooked and clean.

The heating apparatus was barely sufficient to keep down the cold in severe weather.

The water system was out of repair at the time of my visit.

A new fire-escape had been provided for the old, or main building, and its presence gives one more ease of mind, for escape is now possible should occasion require.

The drainage system was blocked and useless when I was there, and repairs could not be made until warm weather set in.

Ventilation was very good.

Light is supplied by coal-oil lamps placed on secure brackets, and no child is allowed to handle lamps at any time.

The school is under the auspices of the Presbyterian Church.

The main building is 66 feet long by 38 feet wide, and consists of two frame storeys, upon a solid stone foundation.

A new wing, 23 x 30 feet, has been added to the rear of the main building. In height and general appearance this is made to correspond with the older part.

A beautiful new residence has been built, in size about 30 x 40 feet, for the use of the principal.

The crops of the past year were not good, owing largely to weather conditions and destructive flies.

The Rev. Mr. Dodds, principal of the school, attends very faithfully to the religious duties of the school.

The pupils appeared to be quite happy in their school home.

FORT ALEXANDER BOARDING SCHOOL (Roman Catholic).

This school was inspected by me, January 13, 1908. The number of boys present was 30; the number of girls, 30, and absent or sick, 4, a total of 64 pupils.

They were classified as follows:—

Standard	I	17 pupils.
"	II	14 "
"	III	7 "
"	IV	13 "
"	V	9 "
	Total	60 "

The school is beautifully situated on the south bank of the Winnipeg river, and within 2 miles of its mouth.

In class examination the reading was good, spelling rather poor, arithmetic fair, copy-book work fair and knowledge of English much improved.

One pupil died during the year of consumption and another was ill with the same disease, but the majority of the children were in robust health.

The food served was plentiful and of excellent quality, and the clothing worn was neat and warm.

The building is heated by hot water and the warmth is sufficient for all needs.

Excellent water, and ample supplies of it, are obtained from the Winnipeg river.

Every floor is supplied with fire-extinguishers and with ample hose for fire-drill.

Some blockage had occurred in the waste pipe and the building was temporarily drained into a cess-pool. The ventilation was none too perfect, but the building was clean and in the best order throughout.

In religion this institution is Roman Catholic.

Crops last year were exceedingly good.

KENORA BOARDING SCHOOL (Roman Catholic).

This school was inspected, November 12, 1907.

There were 65 pupils in attendance at the time of inspection, 48 girls and 17 boys ; 50 of these were treaty children and 15 were non-treaty.

Pupils were classified as follows:—

Standard	I	20 pupils.
"	II	18 "
"	III	15 "
"	IV	12 "
Total		65

The school is situated about 2 miles south of the town of Kenora on the Lake of the Woods.

I must express my admiration of the skill, ability and enthusiasm manifested in teaching these children.

Reading and spelling showed distinct advance on last year's showing and the general behaviour was perfect.

The food was excellent and the clothing neat and good. There is no reserve supply of water for use in case of fire, but there is a good fire-escape at the back of the building.

The drainage is inadequate and defective, but the ventilation is good.

All lighting is by means of coal-oil lamps. The school is under Roman Catholic auspices.

The main building is of brick on a stone foundation, and is 38 x 31 feet, and 3 storeys high.

The work done was very satisfactory.

FORT FRANCES BOARDING SCHOOL (Roman Catholic).

Inspection was made, November 7 and 8, 1907.

I found 51 children in attendance, 22 boys and 29 girls.

Pupils were classified as follows:—

Standard	I	20 pupils.
"	II	15 "
"	III	10 "
"	IV	6 "
Total		51 "

This school is situated on the bank of the Rainy river, about 3 miles above the town of Fort Frances.

I found great improvement in spelling, reading and arithmetic, and in the knowledge of the English language.

The meals served were of the best quality and the cooking was very good.

The pupils were very tidily dressed and everything about the school was clean and neat.

The water-supply was adequate and the fire appliances were in perfect order.

Two excellent fire-escapes afford safety in case of danger from fire.

All closets are self-acting and are in perfect order. The system of ventilation is remarkable for its simplicity and efficiency.

The building is lighted by acetylene gas, which gives great satisfaction.

The religion of the school is distinctly Roman Catholic. The main building is 70 x 40 feet. The superstructure is of frame, 3 storeys high, on a stone foundation.

I must compliment the officers on the progress made in all directions since my last visit to the school.

I have also inspected the following day schools, viz.:—

NORWAY HOUSE AGENCY.

BLACK RIVER DAY SCHOOL (Church of England).

School was inspected, March 26, 1908.

The number of children found present was 9: boys, 4, and girls, 5. These were graded in the following order:—

Standard	I.	7 pupils.
"	II.	2 "

Punctuality was good. Furniture was well taken care of.

The school-house was clean and the conduct of the pupils good. The building is in good repair and is thoroughly whitewashed inside and out. The work done is very elementary.

HOLLOWWATER RIVER DAY SCHOOL (Church of England).

School was inspected, March 27, 1908.

The number of children enrolled was 13, graded as follows:—

Standard	I.	7 pupils.
"	II.	3 "
"	IV.	3 "
	Total.	13 "

Punctuality was very poor. The care of furniture was good. School material was well looked after and the conduct of the pupils was good. Reading, spelling and arithmetic were only fair. This was accounted for not by the inefficiency of the teacher, but by the irregularity of the scholars.

FRASER RIVER DAY SCHOOL (Methodist).

School was inspected, March 30, 1908.

The number of children enrolled was 47, graded as follows:—

Standard	I.	32 pupils.
"	II.	8 "
"	III.	6 "
"	IV.	1 "
	Total.	47 "

Reading and spelling were good, arithmetic and writing fair; punctuality good; furniture was well cared for; school-house was clean and conduct of the pupils good.

The building was in good repair.

JACKHEAD RIVER DAY SCHOOL (Church of England).

This school was inspected, March 31, 1908.

The number of children enrolled was 14, graded as follows:—

Standard I	11 pupils.
" II	3 "

Examination of classes showed rather poor results.

Punctuality was bad. Care of furniture was fair; cleanliness of pupils was poor, and conduct only fair. The school building was in rather poor repair.

The people of this place take no interest in school matters and will not encourage their children to attend.

BERENS RIVER DAY SCHOOL (Methodist).

School was inspected, April 2, 1908.

The number of children enrolled was 33, the average attendance for 3 months was 10. The reasons for the low average were sickness, the distance of children from the school and the lack of food.

The examination of pupils was very satisfactory. Class organization was good. Care of material was good. Obedience of the children was very good.

The building is in fair repair, but not being banked, it was said to be cold in winter weather.

The people of this locality are very proud of their school, and the teacher is a very efficient officer.

FORT FRANCES AGENCY.

LONG SAULT DAY SCHOOL (Church of England).

This school was visited on November 6, 1907.

I found in attendance at the morning session 10 pupils, the average for the past quarter was also 10, and the total number on the roll was 20.

Owing to the absence of the teacher, I was unable to conduct the examination as I desired. I arrived at noon, and the teacher, substituting for that day, dismissed the pupils for the rest of the day without my knowledge.

I had an interview with one of the councillors, who declared that the manner of conducting the school was satisfactory to him and to all his people. The teacher was much respected and the children were making good progress.

The agent, who accompanied me, confirmed these statements and assured me that there could be no complaint.

CLANDEBOYE AGENCY.

ST. PETERS EAST DAY SCHOOL (Roman Catholic).

This school was inspected, January 8, 1908.

The number of children enrolled was 23. These were classified as follows:—

Standard I	13 pupils.
" II	3 "
" III	6 "
" IV	1 "
Total	23 "

The examination of the classes was fairly satisfactory. The attendance has been irregular owing to illness and lack of fuel, which it was the duty of the Indians to have provided. The school was kept clean, material was well cared for, but the obedience of pupils was not very good. The building was in good repair.

ST. PETERS EAST DAY SCHOOL (Church of England).

The school was inspected, January 8, 1908. Number of pupils enrolled was 23. These were graded as follows:—

Standard I	13	pupils.
" II	4	"
" III	3	"
" IV	1	"
" V	2	"
Total	23	"

The teacher here had only been in charge a day or two and had not yet become familiar with her duties so that the examination was not altogether satisfactory.

The building was in good repair and there was every reason to hope that better results would follow very speedily.

ST. PETERS NORTH DAY SCHOOL (Church of England).

This school was visited, January 8, 1908.

At the time of inspection, owing to the non-arrival of the newly appointed teacher, the school was not in active operation.

The building, which is used as a chapel for Sabbath services, was not in very good repair.

ST. PETERS SOUTH DAY SCHOOL (Church of England).

This school was inspected, January 8, 1908.

The number of pupils enrolled was 28; of these there were in

Standard I	9	pupils.
" II	8	"
" III	4	"
" IV	7	"
Total	28	"

The work done was found to be quite elementary. This was the banner school of the agency last year, but through removals and change of teacher, it had not quite kept its status. The building was found to be in poor repair. Punctuality was poor, care of material was good and the school was clean.

MUCKLES CREEK DAY SCHOOL (Church of England).

This school was inspected, January 9, 1908.

The number of children enrolled was 11, classified as follows:—

Standard I	4	pupils.
" II	4	"
" III	2	"
" IV	1	"
Total	11	"

There was one pupil whose progress since last report had been very great, I predict for him a very bright future if his health continues. I could not record similar progress in the case of any other. Attendance had suffered considerably for lack of fuel. The teacher had done her best under the most adverse circumstances. The building was in good repair and school material was properly cared for.

FORT ALEXANDER DAY SCHOOL, LOWER (Church of England).

This school was inspected, January 14, 1908.

Number of pupils enrolled, 7; these were all in standard II. The examination was quite satisfactory and the teacher was very much alive to her work. The care of material was good and the conduct of the pupils was excellent. The school was clean and the building was in a good state of repair. It seemed a pity that where conditions were so helpful, there should be so few scholars to take advantage of them.

FORT ALEXANDER DAY SCHOOL, UPPER. (Church of England).

This school was inspected, January 14, 1908.

The number of children enrolled was 27.

Standard I	12 pupils.
" II	7 "
" III	5 "
" IV	3 "
Total	27 "

There has been decided improvement in the status of this school since last report. Class organization was good. Care of material was good. The school was clean and the conduct of the pupils excellent. The building was in good repair and the furniture was well preserved.

The presence at Fort Alexander of a large and flourishing boarding school, necessarily reduces the attendance at day schools on that reserve, but a good deal of energy is put into the management of the smaller work, and the success which has resulted is quite encouraging.

The Indians here appear to take sufficient interest in their children to provide the school with wood and they encourage their children to attend.

KENORA AGENCY.

EAGLE LAKE DAY SCHOOL (Church of England.

This school was visited, February 25, 1908.

I found the school closed because pupils would not attend. It was stated that for some reason the parents would not send the children. I visited Mr. Fox, the teacher in charge, who courteously showed me the school building, which I found to be in good order. The teacher had determined to re-open the school in a few days and make another effort to gather the children together.

Ample supplies of school material were on hand and in good order.

GENERAL REMARKS.

Much of my time during the year has been taken up with the work of the St. Peters Commission, nearly all of whose meetings I attended.

Considerable time was also spent in the selection of the new St. Peters reserve, and also in visiting Nelson House and Split Lake, in pursuance of departmental orders.

I was further directed to make the payments in the Clandeboye agency, owing to the sickness of the agent, and also in the Norway House agency, as far north as Fisher River.

Notwithstanding this extra labour, I have visited every school in the inspectorate, in active operation, with one or two exceptions.

I have, &c.,

JOHN SEMMENS,

Inspector of Indian Agencies.

PROVINCE OF SASKATCHEWAN,
COWESSSSS BOARDING SCHOOL,
BROADVIEW, April 29, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the Cowessess boarding school for the fiscal year ended March 31, 1908.

Location.—The Cowessess boarding school is situated in the Qu'Appelle valley, south of Crooked lake, on Cowessess reserve.

Land.—There are 40 acres of land, which have been surrendered by the band of the reserve for the use of the Roman Catholic mission.

Buildings.—The buildings at present in use are as follows: the priest's house, 30 x 20 feet; the church, 62 x 20 feet; a house, 20 x 20 feet, exclusively reserved for the Indians; an ice-house, 14 x 12 feet; a stable, 65 x 20 feet; and a general workshop, 30 x 20 feet. The main edifice with the institute proper is a three-storey building. Its dimensions are 58 x 38 feet, and its height from the ground to the top roof is 52 feet.

The basement contains 2 dining-rooms, a kitchen, pantry, dairy-room, a bake-room, a lavatory, with large boiler and power washing-machine, and a rain-water tank.

On the first floor are: the entrance, the parlours, the chapel, the girls' play-room, 24 x 12 feet, the school-room, 26 x 15 feet 8 inches, the boys' play-room, 32 x 14 feet.

On the second floor are: the sewing-room, the pharmacy, the nuns' quarters and 2 sick-rooms, one for the boys and one for the girls.

On the third floor are situated 2 large dormitories, each 35 x 23 feet, their height being 12 feet 6 inches. The garret contains a large water-tank.

The general workshop is a two-storey building with a stone foundation. The first storey comprises a carpenter's department, which is provided with all the latest wood-working tools, viz.: a buzz-planer, a circular-saw-table, a wood-turning lathe, a band saw, an emery wheel for grinding tools, and an improved wood lathe.

On the upper floor, we have organized a small shoe-shop department for the purpose of teaching our young boys all the necessary manual work.

Accommodation.—Under present arrangements, there is accommodation for 65 pupils and a staff of 8.

Attendance.—The attendance is regular, and the authorized number, 45 pupils, is maintained without any difficulty.

Class-room Work.—The programme of studies prescribed by the department is followed as closely as possible. The subjects taught are: religious instruction, drawing, spelling, grammar, arithmetic, history and geography; but special care is given to reading and writing. The progress is good and encouraging.

Farm and Garden.—There are about 130 acres in cultivation. We have also a garden in which is raised a full supply of potatoes and other vegetables for the use of the school. The garden and farm work gives the children a healthy occupation.

Industrial Work.—Besides farm work, boys are taught to care properly for the horses, cattle, pigs and poultry.

The girls are taught sewing, knitting, cooking, bread-making and general housework.

Moral and Religious Training.—Particular attention is given to this important branch of education. A short instruction is given daily on some religious subject,

also on politeness, obedience, cleanliness and order, after which hymns are sung. The pupils take particular delight in such singing. Their character is also cultivated with care.

Health and Sanitation.—The sanitary condition of our school, owing to the excellence of our fresh air, drains and abundance of light, is very good; and the general health of the pupils is a surprise to all our visitors.

Water Supply.—Our water-supply is taken from a well in the basement. It is of fair quality.

Fire Protection.—Fire-protection is abundantly provided for by means of a gasolene engine and power-pump of 100 gallons capacity per minute, connected by a 2-inch stand-pipe with a tank in the attic, which can be shutt off by one pull of a lever, and the water is then pumped direct into the stand-pipe, maintaining a pressure of 100 pounds on a 1½-inch hose, with ⅞-inch nozzle. These connections are placed in each dormitory and in each hall; also one in basement and one outside of building. The pump and engine are used to raise the water required to fill the tank in the attic; from the tank, it flows through a stand-pipe to the plumbing system, which is, consequently always ready for use.

The engine is started by an electric spark, and a stream can be playing on the fire in two seconds. The engine is also provided with a tube-ignition, and should the fire start in such a place that the engine could not be operated, we should still have the water pressure from the tank, on the hose all the time, which pressure amounts to 23 pounds in the basement. The pump is provided with a safety-valve to prevent breakage.

Besides, we have half a dozen fire-buckets hung up throughout the different rooms.

Heating and Lighting.—Our new steam-heating system gives entire satisfaction. The plant is installed in an addition adjoining the building in the rear.

Every precaution has been taken to avoid any danger of fire. The heating apparatus has been placed on a cement floor, and protected by an 8 foot stone wall surrounding the whole addition.

The school, and the other buildings as well, are lighted throughout by acetylene gas, the machine being kept in a properly ventilated room; and is self-ventilated, that is, a tube drives the odour from the machine, directly out of doors.

No lighted lamps are allowed inside, and matches are kept under the control of the attendants. Furthermore, a new system of generator adapted to the acetylene machine by Rev. Brother Eugene has greatly improved its working.

Recreaion.—During summer, football, swimming, fishing and shooting with bows and arrows; and in winter, sliding, skating, playing cards and marbles are the favourite pastimes of our boys.

The girls amuse themselves dressing dolls, singing, swinging, skipping, playing ball and croquet.

I have, &c.,

S. PERRAULT,

Principal.

PROVINCE OF SASKATCHEWAN,
CROWSTAND BOARDING SCHOOL,
KAMASACK, April 22, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of the Crowstand boarding school for the year ended March 31, 1908.

Location.—This school is situated on Coté's reserve, on the main line of the Canadian Northern railway, 3½ miles from the town of Kamsack.

Land.—The land consists of the fractional south half of section 19, township 29, range 31, west of the first principal meridian, and the fractional south half of section 24, township 29, range 32, west of the first principal meridian. In all there are about 379 acres. It is the property of the Presbyterian Church, and was obtained part by free grant and part by purchase. It is well suited for mixed farming, part being rich upland and part river valley.

Buildings.—The buildings consist of the main school, containing staff-rooms, kitchen, dormitories, &c., and school-room. To this is attached a wing containing store-rooms and boys' recreation-room. The other buildings are: principal's residence, stone milk-house and ice-house, frame workshop, frame stables, implement-shed, poultry-house and granary, and three log stables.

During the year a new wing, 24 x 18 feet, and 2 storeys high, was added to the main building. This is to be used for isolation and general hospital purposes. Since last report our thanks are due to the department for a new set of seats for our school-room and a new hyloplate blackboard.

Accommodation.—On account of lack of dormitory space not more than 50 pupils can be properly accommodated. There is accommodation for a staff of 7.

Attendance.—There are now 46 pupils in actual attendance. Besides these there are 7 pupils at home on indefinite sick leave. Most of these will shortly be discharged. During the year there were 8 admissions and 3 discharges.

Class-room Work.—Good work has been done during the year, there being steady progress in all the classes especially would I mention several backward pupils who have shown increased interest in their work.

Farm and Garden.—Had it not been for early frosts all over this northern section, our crop would have been excellent. As it was, wheat graded No. 2 feed, oats were good, but not fit for seed. Garden products, turnips and potatoes were very fair.

In connection with the farm we have 26 cattle, 6 horses and a number of pigs and poultry.

Industries Taught.—The boys take part in all farm operations, including the care and feeding of stock, under a competent farm instructor. The girls do the same in regard to all housework, including sewing, knitting, butter-making, &c. Four of the larger pupils who are nearing graduation have been spending all their time for the past six months at industrial work. In the class-room they have reached standard V.

Moral and Religious Training.—When the weather permits, all our pupils attend our church on Sabbath morning on the reserve. In the afternoon they have Sabbath school, and a service in the evening, especially adapted for them. Every effort is made by all our staff to place before the pupils the highest ideals and to teach the pure and upright life, both by precept and example. But at times we all feel that our difficulties are very much increased by the unsatisfactory condition of affairs on the reserve. I refer to the very prevalent liquor trouble. Fines and imprisonment create dissatis-

faction with both government and church, and this feeling spreads to the school. I am glad, however, to be able to say that during the past winter there has been a decided improvement both on the reserve and in the school.

Health and Sanitation.—Two pupils have been sent home on account of tubercular development and there have been a few cases of sore eyes, but otherwise the health has been excellent. During the winter regular calisthenic exercises have been given to all the pupils. I think the effect has been good. Our drainage system needs re-modelling to give good results.

Water Supply.—This troublesome problem is still before us. But the fact that what appears to be good water has been obtained in the town of Kamsack at a depth of 140 feet, would indicate that we ought to get the same by going perhaps 200 feet deeper. The present method of drawing water from the river is very unsatisfactory.

Fire Protection.—Our building is provided with fire-escapes from each dormitory. Tanks filled with water are placed in the attic and the basement, and connected by pipes and a force-pump. To these are attached hose on each flat, sufficient to reach any part of the building. In addition there are a number of hand grenades in different parts of the school.

Regular fire drill, both night and day, has been given monthly during the year.

Heating and Lighting.—The school is heated by 3 furnaces and some stoves in outlying parts that are only used occasionally. Coal-oil lamps are used for lighting.

Recreation.—In winter the pupils have had coasting and skating for outside amusement, and inside in the evenings, they have played crokinole, checkers, &c. In summer the girls enjoy skipping, playing ball and going for long walks, also swinging and other simple games. The boys take much pleasure in football, baseball and many other games of their own invention.

General Remarks.—This school was inspected by Inspector Graham, in June, 1907. We are grateful to Mr. Graham for the kindly interest he has always shown in the school and all its work. Mr. W. G. Blewett, our agent, has also visited us regularly and shown a sympathetic interest in many ways.

All of which is respectfully submitted.

I have, &c.,

W. McWHINNEY,
Principal.

PROVINCE OF SASKATCHEWAN,
DUCK LAKE BOARDING SCHOOL,
DUCK LAKE, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

Location.—The school is located about ½ a mile from the town of Duck Lake, and 3 miles from the Duck Lake reserve.

Land.—The land in connection with the school comprises 100 acres belonging to the government. Adjoining the school land there is one-half section northeast of section 33, township 43, range 2, west 3rd. meridian, which belongs to the corporation of the Oblate Fathers, but which is cultivated for the benefit of the school.

Buildings.—An extension has been added to the main building, which now measures 240 feet in length. The new extension is 46 x 36 feet, giving a dormitory

space of 87 x 36 feet for the boys. There are placed on the roof 2 æolian ventilators, manufactured by Lessard & Harris Co., Montreal, for discharging the foul air from the dormitory. There are air-pipes besides in the walls for admitting pure air.

By this system a constant circulation of pure air is carried on, and I expect it will greatly benefit the health of the children.

One of these æolian ventilators has also been placed on the girls' dormitory.

The older boys helped with the work on the new building under the direction of the carpenters, and at the beginning of the new year they were rewarded for their labour by being installed in their spacious well aired dormitory, as well as in their bright and comfortable play-room.

The boys' former play-room, at the end of the new one, has been converted into a band-room, with a stage and doors opening into the new building, where they can, at any time give home theatricals and musical soirées, both of which furnish agreeable and innocent recreation for the entire household.

The pleasure and comfort of our boys have been so greatly increased by this improvement that I cannot sufficiently express my gratitude to the department for the aid which it gave me in this matter. The moral as well as the physical has been benefited by the change from the overcrowded rooms of the past years.

The other buildings are: barn, horse-stable, cow-stable, pig-house, hen-house, laundry, sewing-room and bakery.

The kitchen attached to the main building was formerly only one storey. I had the roof raised and a dormitory built, which accommodates 7 sisters in charge of the ordinary house duties.

This has enabled me to set apart rooms for infirmaries, in case of sickness or of weak children, boys or girls.

The main building has been painted with the exception of the new part, which will be done during the fine weather.

Accommodation.—There is ample accommodation for 60 girls, but the highest figure reached during the year was 50 The same number of boys can be comfortably quartered in the new part of the building.

A staff of 15 can be comfortably accommodated.

Attendance.—The authorized number of pupils, 100, was maintained without any difficulty during the year.

Class-room Work.—The children continue to give satisfaction in their studies. They seem to appreciate instruction more and more, as they grow older, and show a great desire to learn all they can before leaving school. They frequently receive letters from former companions, invariably containing the advice to make good use of their time in school, as the more they learn, the better they will find themselves when out of school. This has a remarkably good effect, and the class work is pursued with much ardour.

Business and friendly correspondence is cultivated with much attention and success. A taste for reading is fostered by giving the pupils access to good literature during leisure moments.

Farm and Garden.—One hundred and ten acres of land were brought under cultivation this year, besides our vast garden. The following are the products:—

Wheat, 972 bushels; oats, 604 bushels; barley, 96 bushels; flax, 8 bushels; pease, 26 bushels; potatoes, 880 bushels; turnips, 375 bushels; beets, 60 bushels; mangolds, 60 bushels; beets, 11 bushels; carrots, 6 bushels; parsnips, 5 bushels; onions, 3 bushels; cabbages, 830 head; cauliflowers, 60 head; hay, 120 tons; cattle, 75 head; Shorthorn, 5 head.

Ten acres of breaking were done by the boys this year.

Industries Taught.—The boys take turns at all work common to farm life. The herd belonging to the school being numerous, they have daily practice in the care of live stock. They follow closely the rotation of crops, and seem inclined to reduce to practice the theory of farming, gathered from the study of agriculture pursued

in the class-room. The new building and the repairs on the old ones have given them practice in carpentering and painting.

The girls are trained in cooking and all the branches of housekeeping. Those who are discharged are considered experts in washing and ironing. The charts for cutting and fitting all manner of garments have become so popular that the most coveted favour is to be allowed to join the class in tailoring and dressmaking. Those who master the art carry their charts out with them on being discharged; and according to reports they do very good work with them. A former pupil writes: 'My husband is proud of my cutting and sewing, he did not think I could do so well.' Knitting, darning, patching quilts, making rugs and the like, keep them busy and happy. Time never flags owing to their multiplied duties. Fancy work in cheap material is taught with good results, and a tast for home decorations is springing up. At the annual exhibition the girls were awarded 20 first prizes and 2 second prizes for needlework, knitting and crocheting.

Moral and Religious Training.—Lessons are daily taught to all the children, and by word and example nothing is left undone to form solid habits of virtue in their young souls that may enable them to continue in the path of right-doing when left to themselves. The children are attached to the staff, and the law of love rather than fear predominates.

Health and Sanitation.—To maintain the health of the pupils is the constant endeavour of the staff. I have seconded their efforts by procuring for the dormitories the best system of ventilation to be had.

Some water-closets in too close proximity to the dwelling have been removed, and a new system introduced, which is another step towards improved sanitation. Disinfectants are used where there is the appearance of a necessity; this and thorough cleanliness of beds and clothing are our surest safeguards. There are no bath-rooms for the children, but this is remedied by putting the laundry building at their dispositon every Saturday afternoon, where a good supply of soft water, soap, towels and tubs are to be had, and where the clean clothing is distributed. This is a great advantage, as the soiled clothing is never removed in the dormitories, nor in any part of the dwelling-house.

Notwithstanding our earnest and constant endeavours to maintain the health of our children, we had a few cases of consumption during the year, and nearly all our smaller children paid their tribute to whooping-cough.

Water Supply.—Water is supplied by artesian wells. There is one in the kitchen, one in the laundry and another in the stable. A well supplies a force-pump at the entrance of the main building. A cistern for soft water is attached to the laundry.

Fire Protection.—Our appliances in case of fire are 4 Hempel extinguishers, 1 Victor, 3 Patton, 16 buckets, 6 axes, barrels of water, hose and force-pump.

Regular fire drills are practised by the children, and to facilitate their exit, the doors have been arranged to open on both sides. From both boys' and girls' dormitories there are outside doors opening on galleries furnished with stairs, giving every facility for escape in case of fire.

Heat and Lighting.—The 3 furnaces, which are kept going night and day, are not sufficient for the main building. I put a stove in the boys' new play-room, and another in their dormitory, but they suffered from the cold, though the winter was unusually mild. The lighting for all the building is by acetylene gas.

Recreation.—Long walks in fine weather, outings in the fine season, and sham sports at which all kinds of children's games are entered into with ardour by both boys and girls, make the recreation hours appear too short. Indoor games of every kind make a cold or rainy holiday as attractive as a sunshiny one. Drills, marches and music by the band boys enliven the winter evenings, during which there is usually a singing rehearsal.

General Remarks.—During the Christmas holidays our children did not express the slightest desire to visit their parents. So attractive do we try to make the school

at that time, that the children seem to have forgotten their former longings for liberty during this season.

The most gratifying feature of our festivities was to see the great number of former pupils who contrived to be at the school during these well remembered days of innocent rejoicings. Eight out of the ten pupils discharged last July came from a distance of many miles to be in their old home as they expressed it, at Christmas and New Year. They all edified us by their good conduct and affectionate sentiments. This gives us the hope of influencing them through the critical merging into manhood and womanhood.

Two of the pupils discharged on June 30, were united in marriage on July 18. They spent a few months on the reserve with the girl's parents, then tried another reserve with the boy's parents, but finally decided to take up housekeeping in the vicinity of the school. The young man is decidedly temperate and anxious to make a home, while his young wife is remarkably neat and industrious. I am in hopes that their example will have a beneficial effect on their class-mates.

Inspector Chisholm continues to manifest a real interest in the prosperity of the school and the future of the children. His visits are a source of undisguised pleasure to every one, and are of a nature to inspire fresh efforts towards advancement. Any new methods of discipline or incentives to duty are noted and approved.

Our kind and devoted agent, Mr. Macarthur, is never failing in his efforts to secure good results for the school, by his visits and wise advice, especially to those who are on the point of leaving. His words are always paternal and encouraging, and my most sincere thanks are due to him for the aid he gives me in maintaining the interests of the school.

I have, &c.,
O. CHARLEBOIS, O.M.I.,
Principal.

PROVINCE OF SASKATCHEWAN,
EMMANUEL COLLEGE,
PRINCE ALBERT, May 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of this school for the year ended March 31, 1908.

Location and Land.—The school is situated about 2 miles west of the city of Prince Albert. The land in connection therewith is a river lot, having a frontage of 12 chains and extending back 2 miles. The lot contains 200 acres.

Buildings.—There are 3 buildings occupied by the staff and pupils. The main building is occupied by the female members of the staff and the girls. The bed-rooms, dormitories and lavatory are in the upper storey, and in the lower storey are the school-room, sewing-room, girls' dressing-room and a room for cases of sickness. In the second building is a large clothing-room, a room for drugs and medicines, an office and apartments for the principal.

In the third building are dormitories, lavatory, bath-room and recreation-room for the senior male pupils, a room for the head teacher and a room for the outside man. The outdoor buildings are: a large house, 40 x 16 feet, used as a granary, store-house and dairy; a coach-house, 32 x 16 feet; a stable, 44 x 22 feet; 2 pig pens, one 22 x 12 feet, the other 22 x 14 feet; a hen-house, 16 x 16 feet; an implement-shed, 28 x 19 feet; and an ice-house, 12 x 12 feet.

Grounds.—The ground immediately attached to the buildings is laid out so as to afford ample playgrounds for the pupils, both boys and girls.

Accommodation.—The boys' building is very old and dilapidated. The girls' dormitory in the main building is not sufficiently spacious, but these defects with sufficient outlay could be easily remedied.

Class-room Work.—The pupils attend school twice daily, with the exception of the girls who assist in the dining-room and kitchen by turns. The school hours are from 9.30 a.m. to 12 noon, and from 1.30 to 3 p.m. Besides the regular school hours, they have study from 8 to 8.30 a.m., and from 7 to 8 p.m. The course of study is the same as that used in the public schools of the northwest provinces.

The pupils are graded as follows:—

	Boys.	Girls.	Total.
Standard I.	15	20	35
" II.	4	3	7
" III.	5	11	16
" IV.	3	0	3
" V.	4	1	5
Total.	31	35	66

The reserves from which the attendance is drawn are as follows:—

Bazil Starblanket's reserve.	38
John Smith's reserve.	15
James Smith's reserve.	3
William Charles' reserve.	4
William Twatt's reserve.	3
Mistawasis' reserve.	2
Non-treaty.	1

Farm and Garden.—Our crop last fall was as follows: potatoes, 350 bushels; carrots, 15 bushels; barley, fed in sheaf to pigs and horses about 96 bushels; oats, fed in sheaf to horses and cows, about 1,000 bushels; hay, 13 tons. The products of other industries connected with the farm were: pork, 1,120 pounds; butter, 190 pounds; eggs, 160 dozen; chickens, 120 pounds.

Industrial Work.—All the general work required on the premises is performed by the pupils. The girls are taught all kinds of useful household work, such as sewing, knitting, making clothing, darning, washing, ironing, housecleaning and cooking. The bread used in the school is made by the girls and is baked in a portable Reid oven which has a capacity of 80 loaves of 2 pounds weight.

The boys are taught the various kinds of farm work, such as ploughing, harrowing, harvesting, hay-making, carpentry, repairing of fences, attending to horses and cattle, milking cows, feeding pigs, drawing water, chopping and sawing wood, plastering, kalsomining and any ordinary work required.

Moral and Religious Training.—Morning and evening worship is regularly conducted for the whole school. On Sunday regular religious services are held in the college chapel, morning and evening. Every Sunday afternoon at 3 o'clock, Sunday school is held, this lasts one hour and is always a profitable hour. The children take a deep interest in the study of the holy scriptures and are very fond of singing hymns. Some of our pupils play very well on the organ. A number of them are communicants. Two of our ex-pupils are now at Wycliffe college, Toronto, studying for holy orders. The conduct of our pupils has been satisfactory.

Health and Sanitation.—The health of our pupils has been good during the year. The children have as much outdoor exercise as is profitable. The dormitories, class-rooms and all the rooms are kept very clean and well ventilated.

Water Supply.—This is not as good as it should be. We are reduced to one well, and we require another.

Fire Protection.—We have 8 fire-extinguishers which were supplied by the department, 18 hand-grenades, 12 fire-buckets and 2 axes. We carry an insurance of $5,000.

Heating.—Stoves are used in 2 of the buildings, but a furnace is used in the main building, where the girls and female members of the staff live.

Attendance.—The attendance has been regular and during the course of this fiscal year 5 pupils have been honourably discharged and 12 have been admitted to the school.

Recreation.—The pupils have plenty of recreation. The boys have cricket, base-ball, football, leaping and racing.

The girls enjoy dumb-bell exercise, skipping, throwing and catching the ball, swinging, reading and music.

They take a walk out almost daily, attended by a female member of the staff. We try to make the children feel as comfortable and happy as possible.

I have, &c.,

JAMES TAYLOR,
Principal.

PROVINCE OF SASKATCHEWAN,
FILE HILLS BOARDING SCHOOL,
BALCARRES, April 13, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR.—I have the honour to submit my annual report on the File Hills boarding school for the fiscal year ended March 31, 1908.

Location.—The school buildings are situated on section 33, township 22, range 11, west of the second meridian, adjoining the reserve.

Land.—The east half of section 32, township 22, range 11, west of the second meridian, and also all that part of section 33 which is outside of the boundaries of the Okanese reserve, belong to the school—in all 413 acres. It was purchased and is owntd by the Presbyterian Church. The north half of this land is mostly covered with trees and at present is only valuable for its wood and pasture, but the south portion is more open and with a little extra labour will be well adapted for grain-growing.

Buildings.—The buildings are: the home, class-room, laundry, 2 stables—one log and one frame—a granary, shed, hen-house and 2 root-houses.

Accommodation.—Owing to the girls' dormitory being condemned over a year ago, a tent has been used during the past season to give the boys sleeping accommodation and the boys' dormitory was used by the girls. The accommodation is insufficient for the number of pupils and staff.

Attendance.—The attendance is increasing; 30 pupils have been enrolled. The year closed with an enrolment of 28. Of these one is a day pupil, 4 are non-treaty and one treaty child is under age. There is no difficulty in keeping up a regular attendance. The parents are satisfied when they have their children home for the prescribed holidays.

Class-room Work.—This department is still under the instruction of Miss Cunningham and the results are most satisfactory and encouraging.

The children are developing along the lines of attention and independent thought. They are well up in the work of their standards.

All the subjects of the prescribed programme of studies are taken up.

Farm and Garden.—Owing to the late season last spring and the severe frosts of the fall, which were general throughout the province, our wheat crop was a failure. Most of it was not even worth threshing. From the 35 acres under wheat we only threshed 100 bushels; the rest was fed in the sheaf. Of oats we had 315 bushels. The garden returns were very good—250 bushels of potatoes, 500 bushels of turnips, and smaller quantities of the other vegetables.

During the summer we sold a yoke of steers for $150 and killed 3 of our young cattle for beef for home consumption; also 5 pigs.

At the close of the year we have on hand 17 head of cattle, 1 team of working horses, 4 pigs and 25 hens. Including the gardens and lawns we intend cropping 44 acres this spring, and summer-fallowing 13 acres.

Industries Taught.—The girls are taught to be clean, neat, economical housekeepers and home-makers. Throughout their school-life they are passed from one department to another that they may become familiar with all, and the last year a girl attends school, except in special cases, she is taken out of the class-room and given entire charge of the staff cooking, washing, ironing, &c. She milks one cow and cares for the milk, cream and butter. She does all her own sewing and mending. The idea is to train her to meet and plan for all the various daily duties of a home.

The boys are trained in practical farming and gardening. They are taught the proper care of stock and to do general chores, both outside and in. The system of allowing a boy when he is 16 years old to choose a farm for himself and put in one month's breaking, is proving satisfactory. He is receiving his training in farming under the government farm instructor and is growing familiar with the conditions under which he will have to labour when he leaves school. While on his farm these two summers the school supports him, the same as when he is labouring at the school.

Moral and Religious Training.—These subjects receive special attention. The Bible is carefully studied and memorized and the child is taught to base his ideas of right and wrong on its teachings. There is religious instruction daily.

Health and Sanitation.—At the date of writing all the children are in good health, with the exception of one little girl, and we fear that while visiting an aunt last summer who was dying of consumption, she contracted the disease. She has been at home with her parents most of the winter. The two young girls who have been under treatment for two or three years, died during the past winter. We fear the girls' dormitory is largely responsible for disease among the girls. The boys, as a rule, are healthy.

Fire Protection.—We have ladders, fire-axes, and fire-pails, and water always convenient. The dormitory doors are swung opening to the outside.

Heat and Lighting.—One furnace and 6 stoves are used for heating the buildings. Coal-oil lamps are used for lighting purposes.

Recreation.—The children enjoy the ordinary outdoor sports and games.

Ex-pupils.—Three pupils were discharged last summer. All are living out in the File Hills colony and are doing well. The two young men are farming and the girl is married to a former graduate, who had a comfortable home prepared for her. All the ex-pupils are entirely self-supporting and are providing comfortable homes for the future.

I have, &c.,

KATE GILLESPIE,

Principal.

PROVINCE OF SASKATCHEWAN,
GORDON'S BOARDING SCHOOL,
KUTAWA P.O., April 6, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report of the Gordon's boarding school, from September 1, 1907, the time I took charge of the school.

Location.—The school is located on the west side of Gordon's reserve, about 12 miles from the agency headquarters.

Land.—The area of land in connection with the school is 320 acres, and comprises the east half of section 4, township 27, west of the second principal meridian.

This, I believe, has been allotted to the school by the government and is best adapted for pasture.

Twenty-five or thirty acres might be cultivated, there is no wood, and scarcely any hay; the land is very stony.

Buildings.—The main building is used for school purposes; one building, separate from the school, is used for a laundry, and another for a storehouse, root-house and ice-house, the same as reported last year. Part of the old stable has been pulled down and a new one has been erected, but is not finished.

The new stable is 20 x 40 feet, built of logs, with shingle roof, to be used for horses and cows.

Three new water-closets have been built, 4 x 8 feet; these are built of lumber with shingle roofs. The dining-room and kitchen have been wainscotted in the basement, and new stairs built to same. This is a great improvement. New ceilings of lumber have been put in the school-room, boys' lavatory, girls' lavatory, front room and hall. The first floor is now all ceiled with lumber.

Accommodation.—There is ample accommodation for 35 pupils and 4 of a staff.

Attendance.—The attendance has been remarkably good since I took charge.

Class-room Work.—The pupils' course of studies is that laid down by the department. may add that Mr. Jones, the teacher, is doing excellent work in the school-room towards the advancement of the children.

Farm and Garden.—Five acres on the half section was cropped with oats last year. This, I am sorry to say, was frozen. The yield was 200 bushels. The garden consists of about 3 acres and was in poor condition; the whole crop taken from this plot was 25 bushels of potatoes. This caused considerable expenditure for vegetables to tide over the winter.

Industries Taught.—The boys are taught the care of horses and cattle, milking and gardening in summer.

The girls are taught all household duties, butter-making and care of same. Some of the girls are very good in household duties, also bread-making.

Moral and Religious Training.—Very careful attention is paid the pupils in this respect, and I am happy to say that not one case of immorality has occurred, and no severe punishment has been administered. Their moral conduct has been excellent.

Health and Sanitation.—The health on the whole has been good. A few cases of severe colds have occurred this winter, but nothing of a serious nature. One girl died at her home of consumption last fall.

The sanitary condition is all that can be desired. The building is kept very clean, and is well ventilated. The whole building has been alabastined, and portions of it painted.

Water Supply.—Our water-suply is obtained from sloughs. We cannot get to the wells, on account of their being situated in a slough, which is now full of water. The water-supply is very unsatisfactory.

Fire Protection.—This consists of 2 Babcocks, 2 Carr chemical fire-engines, 1 pump, 2 lengths of hose, 8 buckets, 12 hand-grenades, 6 axes, 6 fire-extinguishers, a tank and several barrels. The tank, extinguishers and Babcock would be of no use in case of fire.

Heating and Lighting.—The building is heated with wood stoves, and is very unsatisfactory.

Lighting is done with coal-oil lamps.

Recreation.—Football and swings form the favourite pastime of the children during the summer months.

Coasting, skating and games in the school-room are the chief recreations during the winter.

I have, &c..

M. WILLIAMS,
Principal

PROVINCE OF SASKATCHEWAN,
KEESEEKOUSE (ST. PHILIPPE'S) BOARDING SCHOOL,
ST. PHILLIPPE'S P.O., April 6, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to forward the annual report and financial statement for the year ending March 31, 1908, of the Keeseekouse (St. Philippe's) boarding school.

Location.—The Keesekouse (St. Philippe's) boarding school is situated on the southwest quarter of section 2, township 32, range 32, west o fthe 1st meridian. This is a homestead, entered and patented in favour of Father J. Decorby, O.M.I. The post office is St. Philippe's, Saskatchewan.

Land.—The school has at its disposal 160 acres of good rich soil, well adapted for farming purposes, but the place is bushy and it will require a large amount of extra work to have it cleared.

Buildings.—The buildings are: 1st, a large house, 35 x 60 feet, 2 storeys high, used principally for the girls and the ladies in charge of the school. In it are included the parlour, refectory, and kitchen, 2 dormitories, a large room for the staff, a recreation-room, working-room and chapel; 2nd, a small house, 20 x 26 feet, 1½ storeys, for the use of the boys. It contains a dormitory, recreation-room and 2 small rooms for the staff in charge of the boys.

This building is rather small, and we are going to build another this summer, 40 x 45 feet, in which, with a larger dormitory and larger recreation-room, we shall have more accommodation, which we need badly, such as bath-rooms, infirmaries, &c.; 3rd, ice-house and washing-room; 4th, a new stable, 22 x 30 feet.

Accommodation.—We have sufficient accommodation for 30 pupils, and necessary staff.

Attendance.—Our last reports show an average of 28 pupils, classified as follows:

Standard I	11 pupils.
" II	2 "
" III	9 "
" IV	6 "

The programme of studies prescribed for these different standards has been followed by the teachers, and the progress is satisfactory.

Farm and Garden.—We have 1½ acres of land for vegetables and 30 acres for corn. The crop of vegetables, potatoes excepted, has been fair; also oats, but the wheat has been a total failure, on account of the frost.

Industries Taught.—Our boys are all rather young. Of our three oldest boys, one died last fall, and two have been removed to the Qu'Appelle industrial school; although young and small, they are an active set of little fellows, and have proved themselves of great help to Father Branillet, in the performance of the various house and farm duties. The girls are taught by the sisters, habits of neatness, order, economy and steady work in all their special lines, such as cooking, sewing, knitting, washing, milking, making butter, &c.

Moral and Religious Training.—The moral and religious training is all that could be desired.

Health and Sanitation.—With the same sanitary precautions the health of our school has not been as good this year as before. Two children died from consumption and three have been granted leave of absence on account of illness. There are very few who have not suffered from some attack, more or less severe, of that epidemic, coughing, which was prevalent all last winter.

Water Supply.—We have a large supply of good water from a well close to the school, but the work in connection with the well has not been properly done, and we have to obtain our water-supply for the present from a creek, which runs through one corner of our land, until we shall have time to dig another well.

Fire Protection.—For fire-protection we have only such primitive appliances as fire-extinguishers, buckets filled with water in each room, ladders, &c., but our buildings are constructed in such a manner that, in case of fire, it would be easy with very little danger to escape even from the upper storeys.

Staff.—The employees of the school are: Father J. Decorby, principal; Father Branillet, assistant; Miss Mary O'Donnell, teacher; Sister St. Bernard, superior; Sisters Flavian, St. John, and Flavie, assistants.

The teacher receives $20 a month and board, the sisters, each $12.50 per month and board, and the priests receive only their board; but all are satisfied and happy with their lot, so long as they can do something to promote the welfare of the poor Indians, and are thankful to the government for kindly helping them in that work.

I have, &c.,

J. DECORBY, O.M.I.,

Principal.

PROVINCE OF SASKATCHEWAN,
LA PLONGE BOARDING SCHOOL,
GREEN LAKE P.O., July 20, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to submit the following annual report of this school for the fiscal year ended March 31, 1908.

Location.—The school is located on the banks of La Plonge river, a short distance from its confluence with the Beaver river.

Land.—The land in connection with the school was acquired simply through settler's possession. It is under brushwood, excepting narrow strips of marshy prairie along the banks of the Beaver river.

Buildings.—These consist of the main building, in which the sisters and the pupils live, a house for the reverend principal and the reverend brothers, two stables, a saw-mill and a laundry, 30 x 16 feet, erected last fall.

Accommodation.—Accommodation can be provided for more than 60 pupils and the necessary staff.

Attendance.—The attendance has been good. There were 4 discharges and 8 admissions.

Class-room Work.—The usual course of studies has been successfully followed.

Farm and Garden.—Apart from the putting up of hay for our increasing herd of cattle, little could be done in this line. However, two small patches were broken up in the valley for a potato and a barley field, but, bad weather and frost having kept their hold very late in the spring and set in again in August, the returns were very poor. A small portion of the wilderness around the house was also cleared and fenced in for a garden; the vegetables did not thrive any better.

Industries Taught.—The girls are taught practically all general housework, including milking. The boys help to take care of the cattle and do the outside work.

Moral and Religious Training.—The Roman Catholic doctrine, which is made the foundation of their morals, is carefully expounded to the children.

Health and Sanitation.—There has been more sickness than usual this year. In the autumn we had to discharge a girl on account of bad health. In January there were four cases of measles. Three recovered promptly, but one is not yet well. However, the general health has been good, our pupils look bright and cheerful.

Water Supply.—We draw a supply of excellent water from La Plonge river by means of an hydraulic ram.

Fire Protection.—We have 15 buckets and some barrels of water always at hand. There is a fire-escape at each end of the school building and 6 doors, which have been arranged so as to open outwards, according to the instructions of the department.

Heating and Lighting.—Five stoves keep the rooms comfortably warm. Coal-oil lamps are used for lighting purposes.

Recreation.—Much of the recreation-time is spent in walking or strolling about the bush, where the pupils enjoy themselves immensely gathering gum, wild flowers or berries, according to the season. The boys have a preference for football and base-ball, and in winter drawing is a favourite pastime with them.

I have, &c.,

F. ANCEL, O.M.I,
Principal.

PROVINCE OF SASKATCHEWAN,
LAC LA RONGE (ALL SAINTS) BOARDING SCHOOL,
LAC LA RONGE P.O., April 13, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of the Lac la Ronge boarding school for the year ended March 31, 1908.

Location.—This school is situated on the western shore of Lac la Ronge, about a mile and a half from where the Big Stone river flows into Lac la Ronge.

Land.—The land is not surveyed as yet, the school, however, claims a strip of land about 125 yards in width and half a mile in length, fronting the lake. Most of this land is fit for cultivation, farther back of this, though, it is very swampy and very little use for anything.

Buildings.—The main building is 26 x 80 feet, with a kitchen attached, 24 x 26 feet. Both are two storeys high and on a stone foundation.

The ground floor of the two buildings is as follows, main building: dining-room, 25 x 32 feet; front hall and stairway, 12 x 14 feet; office and sitting-room, 13 x 14 feet; girls' play-room, 14 x 25 feet; and a class-room, 17½ x 25 feet.

The entire floor of the kitchen is given up to cooking purposes.

The upper floor of the main building is divided as follows: girls' dormitory, 22 x 25 feet; clothing-room, 10 x 16 feet; 2 private rooms, each 10 x 12 feet, another private room, 8 x 10 feet; hall, 5 x 24 feet; corridor, 10 x 12 feet and a boys' dormitory, 25 x 32 feet.

The upper floor of the kitchen contains 2 private rooms, each 9 x 11½ feet, and a room used as a sewing-room and for bathing purposes, 10 x 23 feet. There is also a cellar under the dining-room, 16 x 20 x 6½ feet, which has an opening from the outside.

The following buildings also belong to the school: storehouse, 12 x 18 feet, one and a half storey; workshop, 14 x 24 feet; milk-house, 12 x 12 feet, this has a cellar large enough to hold 2 tons of ice; fish-house, 10 x 10 feet; two stables, each 12 x 12 feet; and a dwelling-house, 14 x 18 feet, one and a half storey high.

There are also the necessary water-closets, one for boys, 8 x 12 feet, and one for the girls, 8 x 14 feet.

Accommodation.—The department has allowed a grant to this school for 50 children, but we find we can hardly accommodate this number, until we build an addition to the main building, this we hope to do this summer.

Attendance.—During the first half of the year we found, as I had expected, trouble with some of the parents of our children. They had the idea, it seems, that they could take their children whenever, and for any length of time they pleased. Some of the children had not been here three weeks, when their parents came, asking to take them home for a week. They were very much surprised when they were refused. In fact, five of them, of course at different times, got so angry that they took their children right out of the school, with the intention of not bringing them back.

However, since then, both children and parents have learned better, and I am glad to say that the parents, or nearly all, have brought back their children again, and I hope that this friction, which exists even in older schools, is now a thing of the past.

These people are all very religious, and some good Christians, and if for no other reason, they value education, but as true children of nature, perhaps it will be sometime before they learn to leave their children alone, while they are in school.

The average attendance during the year has been 35.

Class-room Work.—With the exception of 12 pupils that attended a day school at Little Hills, before this school was opened, all the others were beginners when they came, having never attended school, and for a time progress was necessarily slow. However, apparently the difficult point has been passed for most of them, as nearly all are making an advance.

The programme prescribed by the department is followed as closely as possible.

School hours are from 9 to 12 a.m., and from 1 to 4 p.m.

Farm and Garden.—Our stock has slightly increased since last report, some young pigs and a few hens having been brought in this winter from Prince Albert.

Our cattle are the same as reported last year, viz.: 2 cows and 1 bull; and we also have a team of horses.

As the school is situated on new land, heavily wooded with poplar and spruce, gardening is necessarily very difficult at first. Owing to the short time the school has existed, we only had 1½ acres under cultivation last summer. We planted about 10 bushels of potatoes, some turnips and other vegetables and we took up 80 bushels in the fall. The vegetables did not mature owing perhaps to the lateness of the time of planting, and also to the poor nature of the soil.

Industries Taught.—We try, above all, to make the boys do their daily chores, which consist of sawing wood, stable work, carrying water from the lake to the house, and fishing. The girls are instructed in cooking, sewing, and do all the other indoor work, in the manner in which we expect them to do after leaving the school. We try to impress upon their minds that these seemingly small things are necessary stepping stones to higher things in life.

Besides chores, we teach them gardening, in season, and as we have to do nearly everything by hand, I feel sure that this kind of training is both sure and lasting.

We have also in connection with the school a saw-mill about 10 horse-power, run by water. I shall operate the saw-mill myself this summer, and hope to saw at least 50 M. feet of mostly 1-inch lumber, to be used for improvements around the school. Here also the larger boys have a good opportunity of learning something about machinery. As we have to cut the logs ourselves and haul or float them, sometimes, to the mill, and finally we use the boards for putting up houses, all this is a source of training of the best kind for them. All the larger boys are good at shingling.

Moral and Religious Training.—As these children are all of Christian parents, they do not come to the school ignorant of religious matters; however, we feel that this is really the end in view of the school, namely: to give them Christian training of the proper kind, and we give special attention to this important branch of instruction.

Health.—We feel responsible for the health of the children while in our care, and for this reason, as well as the interest we have at heart in the work, we do all we can to make the school a home, natural to them, that is, as regards their diet and outdoor life.

During the year we had an epidemic of measles in the school—all the children had it and all recovered nicely, with no bad after-effects. Previously to this epidemic, Dr. Steward, who accompanied the scrip commissioners who were paying treaty here, had examined all the children that were then at home, and without exception, he pronounced each one to be sound and fit for school, and more than this, he said that without exception, the Lac la Ronge Indians were the healthiest lot of people (Indians) he had seen during his travels.

Water Supply.—The water is all drawn from the lake, 50 yards away from the house. Lac la Ronge cannot be excelled for purity, and situated as we are, close to the mouth of the Big Stone river, where there is a big rapid, there is a steady current of good fresh water flowing constantly by the school.

Fire Protection.—Our fire-protection at present consists only of the stairs, which are convenient to one of the windows outside of the girls' dormitory.

Recreation.—We have various means of amusing the children—the boys play foot-ball, also skate in the winter, while both the boys and girls coast with toboggans. In summer the girls have a swing and merry-go-round, and the boys have basket-ball.

I have, &c.,

JAS. BROWN,

Principal.

PROVINCE OF SASKATCHEWAN,
MUSCOWEQUAN'S BOARDING SCHOOL,
TOUCHWOOD HILLS P.O., April 12, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of the Muscowequan's boarding school for the fiscal year ended March 31, 1908.

Location.—The Muscowequan's boarding school is located about 12 miles from the Touchwood agency, Kutawa post office, and three miles from the Hudson's Bay Company's store and Touchwood Hills post office, outside of the Indian reserve.

Land.—The land connected with the school comprises 160 acres, the northwest quarter of section 14, township 27, range 15, west of the second meridian, belonging to the Oblate order. Of this land, about 50 acres is under cultivation.

Besides the above, the Oblate order recently secured 320 acres, being the southeast and the southwest quarters of section 14, township 27, range 15, west of the second meridian, about 50 acres of which is under cultivation.

All the above parcels of land are fenced in with barb-wire.

Buildings.—The school buildings include the old church, which now serves as a play-room for the boys; the main building, the basement of which comprises a large cellar, part of which is used as a root-house and dairy; on the first floor are: a kitchen, a small room for bake-oven, a pantry, refectories for sisters and pupils, one room for visitors. On the second floor: girls' dormitory, sewing-room, play-room and sisters' apartments.

There is also a large and comfortable attic. The other part of the building, forming an angle with the first, contains on its first floor: the class-room and a chapel where the pupils assemble for morning and evening prayers. On the upper floor is the boys' dormitory. The other buildings are: the principal's house, the carpenter and blacksmith's shop, stables, a storehouse and a granary.

Accommodation.—This school has accommodation for 40 pupils and a staff of 7 persons.

Attendance.—Thirty-four children attended school regularly during the year.

Class Work.—Satisfactory progress is noticed in all divisions. The programme of studies authorized by the department is strictly followed. The children are taught the usual subjects found in the public school course, with special attention given to composition and the use of the English language.

Farm and Garden.—The area under cultivation is 120 acres. The acreage of crops last year was as follows: wheat, 50 acres; oats, 35 acres; barley, 2 acres; flax, 3 acres; potatoes, 4 acres; 30 acres of summer fallow and the remainder in cabbage, carrots, onions, pease, turnips and beets.

Unfortunately our crops were a complete failure on account of frost.

All the boys assisted when necessary on the farm and in the garden.

Industries Taught.—No industry is specially taught, but it is the aim of the staff to form the children to habits of industry and thrift. Apart from recreation hours, they are kept busy at some occupation or other.

The girls under the direction of the reverend sisters learn all kinds of housework, cooking, laundrying, and cut and make their own clothes, becoming experts in the management of the sewing and knitting machines. The more advanced girls also learn the art of bread-making and have turned out capital bakers.

The boys are taught every branch of farming and when engaged in such work, are constantly under the supervision of a qualified farm instructor.

Moral and Religious Training.—The moral and religious training of the children receives special care. Respect for authority and obedience is continually inculcated and insisted upon. A course of religious instruction is given to the whole school each day; apart from this, they attend morning and evening prapers in the chapel.

Health and Sanitation.—The general health of the school has been good for most of the year. However, two severe cases of pneumonia were the object of our solicitude; but, thanks to the excellent nursing they received, they are now perfectly well.

The conditions conducive to health are maintained by an abundant use of vegetables and wholesome food well prepared; by cleanliness of person and premises, by clothing adapted to the seasons and by plenty of outdoor exercise. Our system of ventilation is good, though not perfect.

Water Supply.—A windmill and large tank supply the water necessary to the whole institution.

Fire Protection.—The school has been provided by the department with 2 Babcocks, fire-extinguishers and axes. Hose is attached to the water-supply.

Heating and Lighting.—The building is heated by 16 box-stoves. Owing to the construction of the building it is difficult to maintain a regular temperature. Lamps burning coal oil supply the light.

Recreation.—Both boys and girls have well laid out playgrounds and all take their recreation in the open air when the weather permits. Skating, football and gymnastic exercises are the boys' principal outdoor amusements.

General Remarks.—The school has been visited regularly during the year by our agent, Mr. W. Murison, to whom I beg to tender my sincere thanks for his unvarying kindness and earnest co-operation in all matters connected with the school.

We have been unfortunate with our horses, losing 20 from glanders, and as our crops were a complete failure on account of frost, the prospects were not very bright for the time being, but owing to the generosity of the department, which gave $600 above the usual grant, we have been enabled to buy 2 teams of horses, with which the most necessary work was performed. In conclusion, I must say that it is with pleasure that I bear grateful testimony to this and many other acts of kindness.

I have, &c.,

E. PLANET, O.M.I.,
Principal.

PROVINCE OF SASKATCHEWAN,
ONION LAKE (ST. ANTHONY'S) ROMAN CATHOLIC BOARDING SCHOOL.
ONION LAKE, April 20, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report of the Onion Lake (St. Anthony's) Roman Catholic boarding school, for the year ended March 31, 1908.

Location.—The school is situated on Seekaskootch reserve, about 12 miles from old Fort Pitt, on the north side of the Saskatchewan river.

Land.—About 7 or 8 acres of land are fenced in, and set apart for the use of the school, buildings, gardens and playgrounds. The land belongs to the Indians of the reserve.

Buildings.—The buildings are 3 separate buildings, put up at different periods, but connected now by winding staircases, from top to bottom of the buildings. The

main building is 45 x 35 feet, 3 storeys high. On the first floor is the junior class-room, 25 x 35 x 9¾ feet ; this room also serves as the boys' recreation hall in winter ; pupils' dining-room, 20 x 35 x 9¾ feet. On the second floor are the senior class-room, 25 x 23 x 9¾ feet; girls' sewing and recreation-room, 20 x 35 x 9¾ feet, and pupils' infirmary, 22 x 25 x 9¾ feet. The third storey is one vast room, 45 x 30 x 8½ feet, used as the girls' dormitory; the attic is used as a wardrobe and store-room for girls clothes, and is 45 x 25 feet.

The second building is 36 x 26 feet, 33 feet in height. On the first floor are the dining-rooms for staff, 13 x 16 x 9¾ feet, kitchen, 20x 26 x 9¾ feet ; second floor comprises the private chapel for the sisters and pupils, and is 26 x 36 x 9¾ feet. On the third floor is the boys' dormitory, 22 x 36 x 8 feet.

To this building is attached the storehouses and pantries. The third building is a log structure, 25 x 30 feet, 2 storeys occupied by the sisters.

All the buildings have been painted during the past summer, and somewhat improved. They are comfortable, convenient and present an attractive appearance.

Accommodation.—There is ample accommodation at present for 70 pupils.

Attendance.—The average attendance during this term has been 53. There have been 11 discharges and one transferred to the industrial school at Dunbow and 18 admissions since last March.

Class-room Work.—Two teachers have charge of the classes in different rooms. The programme of studies prescribed by the department is followed closely. The class work is done neatly with application and emulation.

The pupils are fond of studying. Half an hour is given every day for singing. The pupils form the church choir; they are able to sing in Latin, English and Cree.

Farm and Garden.—About 3 acres of land is cultivated for a garden. Sufficient vegetables of all kinds are raised. Both boys and girls take an active part in this work.

Industries Taught.—The boys have the care of horses and cattle, the preparing of fuel, bakery and cobbling. A good reward and pleasure to them is to go out to the hay camp for a few weeks to help with the work. The girls are carefully taught and trained in all branches of housekeeping : cooking, washing, ironing, sewing and darning.

Moral and Religious Training.—Great care and special attention is given to this most important part of education. Religious instruction is given twice a week, morning and evening devotions are attended in the chapel. Respect and obedience for all authority is continually inculcated and insisted upon. The pupils' conduct has been satisfactory.

Health and Sanitation.—The pupils' health has been remarkably good during the year. Dr. Adams, of Lloydminster, is the medical officer, and has had the opportunity of seeing our children several times during the year. There is nothing lacking in the attention paid to the sanitary conditon of the school, good and daily ventilation, disinfectants and plenty of fresh air.

Water Supply.—Plenty of good water is supplied from a well a few yards from the house.

Fire Protection.—A well, tank with pump, ladders, pails, axes and barrels of water in summer are kept in readiness.

There are exits from both the boys' and girls' dormitories on each side and stairs leading from the top down to the first floor, with an outside door at foot of stairs.

The stairway is wide, winding and well lighted. The greatest care is taken to prevent fire, the pupils are never allowed to light lamps or stoves, nor to carry matches in their pockets.

We have also received during the year 12 dry dust fire-extinguishers from the department.

We are now well provided with the necessary means of protection against fire.

Heating and Lighting.—The buildings are heated with 14 wood stoves, the house is warm. Coal-oil lamps, suspended from the ceiling in the pupils' apartments, furnish light.

Recreation.—Three hours of recreation in summer, and four hours in winter, is given to the pupils daily.

All recreations are taken in the open air as much as possible, even in winter.

Swings, football, croquet, lawn tennis, coasting and skating are the chief amusements. The pupils are fond of reading, several have subscribed to the 'Young Folks Magazine.' During the summer holidays a couple of weeks camping out near a nice lake is greatly enjoyed and seems to be of a great benefit to the pupils.

General Remarks.—Among the improvements of this last fiscal year not yet mentioned in this report is an addition that has been built expressly for laundry purposes.

All the boys' and girls' clothing is made by the sisters and the larger girls, who are trained in this branch.

A triangle, on which to sound the fire alarm, was sent by the department. Fire drills are given frequently to the children, even during the night, without previous notice. All is done promptly and in an orderly manner.

I have, &c.,

E. J. CUNNINGHAM.

Principal.

PROVINCE OF SASKATCHEWAN,
ONION LAKE C. E. BOARDING SCHOOL,
ONION LAKE, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I beg to submit the annual report of the Church of England boarding school, under my charge, for the fiscal year ending, March 31, 1908.

Location.—This school is situated on the northeast corner of Makao's reserve and about 300 yards southwest of the agency headquarter buildings.

Land.—There is about 30 acres of land connected with this school and mission; this land being part of the reserve.

Buildings.—The present school-house is a frame building, 30 x 40 feet, and 3 storeys high, finished and painted throughout.

The lower floor is used as one large class-room. The second floor is divided into rooms for members of the staff and the older boys and is reached by an outside stair. On both these floors the partitions and ceilings are finished with steel ceiling.

The third floor is one large dormitory without partitions and is reached by an inside stair from the second floor.

Ventilation and light have been carefully provided, there being 11 windows on each floor, with a fan-light on each window, while on the upper floor extra ventilation is secured by a hinged window and a trap door in the roof, which can be opened at pleasure.

The 3 storey log building, 24 x 28 feet, formerly used as a school-room and boys' dormitories is now given up for laundry and hospital purposes. The laundry is on the lower floor and is supplied with a good well, while the two upper floors, reached by an outside stair, are now partitioned and lathed and ready for the plasterers, and will be completed very shortly, and used as a hospital when required.

Between these two buildings, stands another log building, 20 x 22 feet, 2 storeys high.

The lower floor contains 2 rooms, one of which is used as a clothing-room and the other by any workmen engaged about the mission. The upper floor is used as a sewing-room and is reached by an outside stair.

Near this is a log store-room, 15 x 20 feet, with an upper and lower floor, used for storing meat; in addition to this a frame storehouse, 18 x 24 feet, was built last fall, which is used for storing flour and other provisions.

The mission house, which forms the quarters for the staff and all the girls of the school, is made up of 6 buildings, erected at different times, but all connected. Any one of the 4 outer doors gives access to the whole building, which is about 60 feet square.

On the lower floor are the principal's office, Indian waiting-room, dispensary, sitting-room and bed-room, 2 dining-rooms, a kitchen, bakery and pantry. Of these the children's dining-room and kitchen have had new floors laid during the year by the pupils.

The upper floors are used as bed-rooms for the staff and girls' dormitories, these last are two large rooms, 24 x 36 feet, and 20 x 24 feet, without partitions, and one outer door leading into a balcony, also reached by an outside stair, so that a fire-escape and free ventilation are both provided.

There is also a cellar, 20 x 30 x 7 feet.

Our stables are very commodious and comfortable and afford ample room for all purposes.

Accommodation.—We have ample accommodation for 70 pupils and a staff of 8 or more, if necessary.

Attendance.—Nearly all the pupils being boarders, their attendance is regular, but we have also 3 or 4 day pupils, and their attendance is most unsatisfactory.

Class-room Work.—Here very satisfactory progress has been made, we have been fortunate enough to secure two good certificated teachers, one man and a lady teacher, and the children are showing more than usual interest in their studies.

Farm and Garden.—Our farm and garden land covers about 5 acres, and last year we raised sufficient vegetables to supply the entire mission school. The work was done altogether by the staff and pupils.

Industries Taught.—The boys are taught carpentry and building principally, but they also have the care of the horses, cows, pigs, sheep and poultry.

The girls are taught general housework, i.e. cooking, baking, butter and cheese making, sewing and knitting, washing and ironing.

Moral and Religious Training.—Particular attention is paid to this part of the work, by each one of the staff, realizing, as we do, that without such training, all other work is wasted. We do not aim so much at teaching the tenets of any particular church, as teaching the simple gospel, and so leading them to Christ.

Health and Sanitation.—The health of the children and all connected with the school has been excellent. In view of the present exaggerated, and in some cases, most unfair agitation, regarding the unhealthy condition of Indian schools in general, I would like to draw attention to the fact that for the past year in this school, with a roll of over 60 children, half-breeds, Indians and whites, gathered from different places throughout Alberta and Saskatchewan, hundreds of miles apart, there has not been a single case of sickness serious enough to prevent attendance of the child at school and dining table for any two days in the year, and all this without any change in the system of ventilation and sanitation pursued by this school for the last 15 years. Can any public school in Canada show a better, or as good a record.

Water Supply.—This is ample, we have 3 wells and a sufficient supply of good water.

Fire Protection.—Two small chemical, and one dozen Eclipse fire-extinguishers, with wells and plenty of water in two of the large buildings are all the protection we

have ; but constant watchfulness and care as to stoves, stove-pipes and chimneys are our best protection

The doors of all the dormitories have been hung to open outwards.

Heating.—All the buildings are heated with wood stoves. Where there is danger of the children playing with fire, we use the top-draught stoves, so that it is almost impossible for them to reach the fire.

Recreation.—The principal recreations are football, cricket, swings, foot-racing and other forms of athletics.

All of which is respectfully submitted.

I have &c.,

J. R. MATHESON,

Principal.

PROVINCE OF SASKATCHEWAN,
ROUND LAKE BOARDING SCHOOL,
WHITEWOOD P.O., May 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report of the Round Lake boarding school for the year ended March 31, 1908.

Location.—The school is situated in the Qu'Appelle valley at the east end of Round lake, on the northwest quarter of section 14, township 18, range 3.

Buildings.—The buildings, which are as follows, are frame on stone foundation. The main building contains reception-room, parlour, dining-rooms, kitchen, laundry, rooms for four members of staff, girls' bed-rooms, store-rooms, cellars and boys' and girls' waiting-rooms.

The school-house contains : school-room, 2 class-rooms, boys' bed-rooms, the teacher's room and farmer's room.

There is also a bank barn with stables underneath.

Accommodation.—This school has accommodation for 80 pupils and a staff of 6.

Health and Sanitation.—The location is well drained towards the lake and river. The rooms are large and well ventilated. Strict attention is observed in keeping the premises clean.

The health of the pupils is good. We have not a single case of scrofula in the school.

Water.—The supply of water is abundant from the river. There is also a well and soft water cistern.

Class-room Work.—The pupils attend classes from 9 to 12 a.m. and from 1.30 to 4 p.m., and good progress has been made. The programme of studies laid down by the department has been followed.

Farm and Garden.—There is about 100 acres under cultivation. There is also a herd of cattle, and the dairy furnishes us with an abundant supply of milk and butter.

Industries Taught.—The girls are taught general housework, baking, cooking, laundry and plain and fancy needle-work.

The boys are instructed in agriculture.

Attendance.—During the year the attendance has been good.

Religious Instruction.—We have morning and evening devotions, Sunday school, public services ; and in all our teachings and dealings with our pupils we seek to build up a Christian character.

Fire Protection.—A constant supply of water is kept on hand, fire-buckets are placed in convenient places; fire-extinguishers; and an easy escape is provided from all the bed-rooms.

Heating.—The buildings are heated by means of hot-air furnaces and wood stoves.

Recreation.—During summer we have football, croquet, swings and swimming; in winter skating, tobogganing and various indoor games.

placed in convenient places; fire-extinguishers; and an easy escape is provided from all being used.

I have, &c.,

H. McKAY,
Principal.

PROVINCE OF SASKATCHEWAN,
THUNDERCHILD'S (ST. HENRY) BOARDING SCHOOL,
DELMAS P.O., March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit a report of Thunderchild's (St. Henry) boarding school for the year ended March 31, 1908.

Location.—The Thunderchild's (St. Henry) boarding school is adjacent to Thunderchild's reserve, on the Roman Catholic mission.

Land.—The land in connection with the school consists of the southeast quarter of section 6, township 46, range 18, west of the 3rd meridian, patented.

Buildings.—The main building is of frame, on a stone foundation. Its dimensions are 36 x 28 feet. The main building has been much improved this year by the addition of a three-storey annex, 36 x 28 feet. We have now a spacious dormitory for the boys' use, also a good-sized refectory and class-room, which were greatly needed. The third storey is not completed.

Great care has been taken in providing ventilation and light.

Accommodation.—The enlargement of the building gives ample room for the children's use. The boys' splendid, airy dormitory, with its regular rows of beds, white spreads and pillow shams, is an object of admiration to visitors. We could easily find room for 20 more pupils.

Attendance.—All the children being boarders, the attendance is regular, and I am happy to state that there has been a marked improvement in general application and proficiency during the past year.

Class-room Work.—All the subjects of the programme have been regularly taught. The studies were not only encouraging and satisfactory to the pupils, but also to the teachers. By slight rewards, more interest and improvement have been manifested, especially in reading, arithmetic and drawing.

Besides the regular school hours they have study from 5 to 6 p.m.

Farm and Garden.—Although the extent of garden is limited, still the vegetables raised help to supply the school.

I purchased last fall some two-year old fruit trees, viz.: 5 plum-trees, 5 apple-trees and 5 cherry-trees, as an experiment.

Anyone can easily imagine seeing the children asking questions concerning the apple-trees. The snow is not yet gone and still their curiosity is greatly aroused to see the trees bud out, but more by wanting to taste of them. If no misfortune happens, they will likely satisfy their tastes.

Industries Taught.—The principal occupations of the boys are: gardening, sawing and splitting wood and helping in caring for the horses, cattle and poultry. They also bake their own bread.

The girls receive instruction and practice in all lines of housework. They are also taught the use of the sewing-machine.

Moral and Religious Training.—A large portion of the reverend father's and sisters' time is devoted to this essential part of education. The conduct and general behaviour of the children give great satisfaction. Time and again we are told by visitors, who are numerous, that the children are cheerful and agree well together.

Health and Sanitation.—One death occurred last September from consumption. The health of the other children has been quite good, so far.

The building is well ventilated. During vacation most of the children are taken home by their parents; those who remain amuse themselves picking berries and catching gophers, both of which are in great numbers in this neighbourhood.

Fire Protection.—The department through our inspector, Mr. Chisholm, has provided the school with 2 Star chemical fire-extinguishers. the glass lining of one was broken when received. The remaining one has been placed in a convenient position. Axes are in every apartment of the old building. The means of entrance and exit are well planned and ample. Two fire-escapes were constructed last fall, one leading to the boys' dormitory and the other to the girls' dormitory.

Heating and Lighting.— The building and annex are heated entirely by 2 hot-air 'Little Ox' furnaces, which give thorough satisfaction. Wood is the fuel used.

An abundant supply of pure air is constantly admitted, to replace the foul air that leaves by the ventilators in each apartment.

Light is supplied by coal-oil lamps.

Recreation.—The way to succeed with boys is to give them all the fun they need when not employed with work or lessons. Football is one of their greatest sports; running and jumping are indulged in freely in the open air. Quite a number of indoor games are enjoyed during the winter nights.

General Remarks.—Last fall, we had the privilege of seeing a northwestern pioneer, Mr. Jackson, now a reporter for one of the leading papers of Chicago, Ill. His aim was to visit the Indian schools and compare the progress of to-day with 50 years ago. He made the children read, examined their writing and drawing books, &c., and expressed his surprise at seeing such an improvement, which he said could not be easily surpassed by children of the public schools.

Before closing, I wish to take this opportunity to return my thanks to the government officials who have so seconded my efforts to improve the work done in this school.

My sincerest thanks are given to Inspector W. J. Chisholm and to our energetic agent, Mr. J. P. G. Day, for their help in all matters pertaining and leading to the welfare of the institution.

I have, &c.,

H. DELMAS, priest, O.M.I.
Principal.

PROVINCE OF SASKATCHEWAN,
BATTLEFORD INDUSTRIAL SCHOOL,
BATTLEFORD, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—In accordance with your circular of March 12, the following report in connection with this school for the fiscal year just ended is respectfully submitted:—

Location.—The school is located on the high south bank of the Battle river, about 2 miles west of where this river falls into the north branch of the Saskatchewan river, and about 2 miles south of the town of Battleford, which is our post office. This place is in a beautiful situation overlooking towards the north the two towns of Battleford and North Battleford (the latter a divisional point of the Canadian Northern railway) and the rivers already mentioned, with their picturesque valleys; to the south the Eagle Hill range, and a vast extent of country in all directions.

The school buildings are erected on land specially reserved by the Dominion government for the use of this school. The main building, with certain changes and additions rendered necessary for the work of the school, is the same that was used as the official residence of the Honourable David Laird, the present Indian Commissioner, when he was the first lieutenant-governor of the then Northwest Territories; it was also used as the Council chamber for the meetings of the Northwest Council of those days.

Land.—In the immediate vicinity of the buildings we have a reserve of 566 acres; and one of 376 acres, 3 miles east of the school. The former is where all our farming land is; the latter is mainly a hay swamp, where we get our supply of hay each year. The land is in township 43, range 16, west of the third principal meridian, and embraces portions of sections 15, 17, 18, 19 and 20.

Buildings.—These consist of the main building, in which the pupils and most of the members of the staff reside, the principal's residence, 2 cottages, carpenter-shop, blacksmith's shop, store-room, stable, well-house, pig-pen, warehouse, root-house, laundry, granary, and the usual small outbuildings, besides carriage and implement sheds.

Accommodation.—We have accommodation for about 150 pupils if we could get that number, and for the staff that would be required to instruct and care for them.

Attendance.—Three pupils, boys, died; 8 boys and 3 girls were discharged during the year, and 13 boys and 8 girls were admitted during the same period. We enter on the incoming year with 69 pupils in residence.

Class-room Work.—The course of studies required by the department is followed, and the pupils are graded from the alphabet up to standard VI. Several of our ex-pupils are engaged in the work of teaching in connection with the Indian schools in Manitoba, Saskatchewan and Alberta.

Farm and Garden.—We have some 60 acres cultivated, about 6 of this being worked as a vegetable garden and potato patch.

Industries Taught.—Farming and gardening, the care of horses, cattle, pigs and poultry, carpentering, kalsomining, painting, glazing, &c., baking, dairy work, laundry work, sewing, knitting, making and mending clothes, cooking and general housework are taught the pupils.

Moral and Religious Training.—To this we give careful attention as being the only foundation on which to build up worthy characters and true citizenship. We have the regular Sunday services of the church, the Sunday school, a shortened form

of morning and evening prayer, with the reading of Holy Scripture each day, and a mid-week service each Wednesday evening. A circle of 'The King's Daughters' among the girls, and 'The King's Sons' among the boys, and a branch of the 'Daily Scripture Reading Union,' to which both boys and girls belong, have been carried on for several years with manifestly good results. The organizations are officered by the pupils and are carried on under staff supervision.

Health and Sanitation.—We have been blessed with good health in general throughout the year. The ventilation of the building is good, and the sanitary arrangements are attended to carefully.

Water Supply.—We have a good supply of water of the best quality in our wells.

Fire Protection.—We have a number of hand-grenades, Babcock fire-extinguishers, axes, and pails of water placed in different parts of the building. There are 4 tanks in which a fresh supply of water is always kept. Iron pipes connect with the upper 2 tanks, and lead down to the lower floors, where rubber hose connect with them. A McRobie fire-apparatus is also located in the centre of the main building, having pipes and hose extending from it to each storey. There are fire-escapes from the dormitories, and a supply of ladders is always kept near at hand. We have frequent fire-drills.

Heating.—This is done by hot-air furnaces and ordinary stoves, wood being the only fuel used.

Lighting—Ordinary lamps with coal oil are all we have for this purpose.

Recreation.—Swings, football, hockey and other games, with plenty of other outdoor exercises, are provided. We also instruct the boys in the use of the buck-saw on the wood-pile.

Ex-pupils.—Of those who have returned to their reserves, some have not done as well as one could wish; in many cases their environment is very much against them. But these are not all; there are others of them who have their own portion of land cultivated, their own houses, animals and other property, and are doing very well. Others again there are who have not returned to reserve life, but have struck out to work among the settlers, some at general work, some at carpentering. In this way they gain a knowledge of the settled life of the country, which is a very valuable possession whether they afterwards use it on the reserve, or keep on at work among the settlers, or become homesteaders eventually, as it is to be hoped many of them will. Some of our ex-pupils are engaged in various places as teachers or helpers in connection with the Indian schools; one is at present attending college, taking a university course with a view to entering the ministry; another has completed his college course and been ordained to the sacred ministry of the church. He is married to an English lady and they are both doing remarkably good work in charge of one of our missions and boarding schools. Nearly all the girls that have been discharged are married, most of them on the reserves, to ex-pupils and others, but several of them are married to white settlers, and are keeping their homes in a creditable condition. While the results may not be in all cases what some might desire, yet we must not expect too much when we take all things into consideration. Improvement is very evident; the schools are doing good work, and the leaven of their teaching is seen in the surroundings of their ex-pupils. There is a very marked difference between the tone of the reserve where a considerable number of our ex-pupils are living, and that of those reserves that are without them.

General Remarks.—I have pleasure in bearing testimony to the good work done by the various members of the staff. This tends to help in accomplishing the great work of teaching, training and uplifting the Indian to the plane on which we hope he will stand by and by.

I beg to thank the officers of the department for the consideration, courtesy and kindness shown by them in all their dealings with us.

I have, &c.,

E. MATHESON,

Principal.

PROVINCE OF SASKATCHEWAN,
QU'APPELLE INDUSTRIAL SCHOOL,
LEBRET P. O., April 8, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report o fthe fiscal year ended March 31, 1908.

Location.—This school is situated in the picturesque Qu'Appelle valley, 18 miles north of the Canadian Pacific railway main line, 7 miles south of a Canadian Pacific branch line. It is not situated on a reserve, but is centrally located for the Assiniboine, Crooked Lakes, File Hills, Muscowpetung, Touchwood Hills and Sioux reserve.

Land.—The area of land belonging to this school and immediately surrounding it comprises about 509 acres, all in township 21, range 13, west of the second meridian, it was specially surveyed and reserved for the purpose by the Department of the Interior and is made up of parts of different sections; about 14 acres on the northwest corner of section 2, on which the school buildings and garden are situated, about 145 acres on the west side of section two. This is nearly all coulee and side hills covered with scrub, but was required for a roadway to the farm on top of the hill. About 290 acres, or the east half of section 10, is badly cut up by hills and ravines, but has some arable land; it affords fair pasturage in wet seasons; 80 acres, or the west half of the southwest quarter of section 14, is good land but badly cut by sloughs.

In addition to the above, 5 miles from the school are 3 quarter-sections reserved for hay. The northwest quarter of section 34, township 21, range 13, was bought by the department. All farm lands are fenced with barbed wire.

Buildings.—The present school comprises three separate buildings, viz.: main building, size 120 by 50 feet, containing kitchen, dining-room, offices, chapel and hospital. Girls' building, size 80 by 50 feet, contains play-rooms, class-rooms and dormitories. Boys' building is same size as girls' and used for same purposes.

Accommodation.—The school will accommodate 225 pupils and staff of 15.

Attendance.—The attendance for the year has been satisfactory. There were 240 pupils enrolled at the end of March, 111 boys and 129 girls.

Class-room Work.—The grading under the schedule of studies prescribed by the department was as follows:—

	Boys.	Girls.	Total.
Standard I.	19	42	61
" II.	48	46	94
" III.	34	22	56
" IV.	10	12	22
" V.	0	7	7

The first and second standards attend class regularly for 6 hours each day. The higher standards attend class one-half of the day and work at the different trades and general housekeeping the other half.

Farm and Garden.—About 200 acres were planted last season, 125 acres under wheat, 60 acres under oats and about 10 acres under roots. The wheat crop was a complete failure, owing to frost, the oat crop was also frozen but made good feed. About 15 boys are attached to the farm and worked as required.

Stock.—The stock is in good condition and comprises 31 head of cattle, 26 horses, 60 hogs and about 100 poultry.

INDUSTRIES TAUGHT.—The following industries are taught:—

Blacksmith's Shop.—Four boys are learning blacksmithing and are capable of doing most of the school work. A fair amount of custom work was done during the year.

Shoe Shop.—Eight boys are working in the shop, making and repairing boots, shoes and harness. Much outside work is done by this shop.

Baker's Shop.—Four boys assist in this shop. The slaughtering and curing of beef and pork is also done by the baker and his assistants.

Carpenter Shop.—Eight boys are employed here and are taught the general principles of carpentry. Custom work consists of repairing carriages and implements, also cabinet-making.

Tinsmith Shop.—Two boys are working here, repairing and doing school and custom work.

Girls' Work.—Under the direction of the reverend sisters the girls learn all the different branches of housekeeping. They are taught to make their clothes and the greater part worn by the boys. They are taught dairying and have the entire charge of the poultry.

Moral and Religious Training.—The vice-principal and teachers attend to the moral training and general manners of the pupils. On Sunday, and every day during the winter months, I hold class for the whole school, when I give religious instruction for one hour after class. Chapel is attended night and morning daily.

Health and Sanitation.—The health of the pupils for the past year has been good. The physician in charge inspects regularly and is giving the best of satisfaction.

Water Supply.—Drinking water is obtained from 4 wells. The water, which supplies the house and laundry, also fire-protection, is brought from the lake about 300 yards distant from the buildings, through a 2-inch iron pipe, and into two 1,500 gallon air pressure tanks.

Fire Protection.—Two 50-feet hose on each flat of the main, boys' and girls' buildings, are connected with the air pressure tanks. There are also 2 McRobie 75-gallon chemical tanks, with 50 feet of hose attached, on each flat of the main and girls' building. There is an electrical fire-alarm system, with stations placed throughout the different buildings. Fire-drills are practised at intervals, and every precaution for the saving of life and property is taken. There are 2 iron fire-escapes attached to each of the 3 buildings, and 36 Star chemical hand fire-extinguishers are conveniently placed, as well as 12 Eclipse dry dust fire-extinguishers.

Heating and Lighting.—Two Gurney one-pipe steam boilers are used for heating the main building, and one Gurney in each of the boys' and girls' buildings. Two Siche gas tanks supply light in all the three buildings. Coal oil and wood are used in the shops.

Recreation.—Football and baseball are the chief sports for the boys in summer, and in winter skating and hockey.

I have, &c.,

J. HUGONARD,
Principal.

PROVINCE OF SASKATCHEWAN,
REGINA INDUSTRIAL SCHOOL,
REGINA, April 15, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location.—The school is located on the banks of the Wascana creek, 4 miles northwest of the city of Regina. It is not on a reserve. A half-section of land was originally set apart for the use of the school; in 1903 the government reserved an additional section. The soil is a stiff clay, which can only be worked by the heaviest teams. Wheat, oats, barley, flax, brome-grass and all the common vegetables and small fruits do well. The land in its natural condition was treeless prairie, with that uneven surface known as 'hummocks.' Old Indian hunters say they could not gallop their horses after the buffalo on this land, on account of its uneven surface, and that the buffalo seemed to know this and resorted to this 'hummocky' district in great numbers. Ash-leaved maple, ash, Russian and common poplar, and elm trees have been planted by the walks and fences, also in belts as windbreaks about the buildings and gardens. These are growing rapidly, providing a considerable shelter from high winds and adding to the appearance of the farm and grounds.

Buildings.—The main building is of brick two-storeys high. The central part of the first floor contains the office, dispensary, reception-room, dining-rooms, kitchen, store-room, sewing-room and scullery. On the second floor of this part are the bed-rooms for the staff and a small dormitory for the little boys. Boys' quarters and the assembly-room are in the south wing. The boys' dormitory, clothing store-room, lockers and wash-room, are on the second floor of this wing. In the north wing, the girls' dormitory, wash-room and clothing store-room are on the second floor. On the first floor of the north wing are two well lighted class-rooms. The basement, which extends under the whole building, contains furnace-room, fuel-room, laundry, water-closets, pupils' bath-rooms, cisterns and water-tanks.

The other buildings are : a two-storey brick veneered residence for the principal, a farm cottage, a cottage hospital, old laundry building, ice-house, carpenter's shop, engine-house and blacksmith's shop.

The farm buildings are : barn, with horse-stable underneath, cow-stable, hog-pen, implement-shed, and poultry-house.

Accommodation.—There is accommodation for 150 pupils and a staff of 12.

Attendance.—During the past year the attendance was about 66.

Class-room Work.—The class-room is graded as follows :—

Standard	VI.	7 pupils.
"	V.	11 "
"	IV.	9 "
"	III.	18 "
"	II.	9 "
"	I	22 "

The course of study outlined by the department for the use of Indian schools is followed.

Farm and Garden.—This is a very important part of the industrial training for the boys.

The farm last year produced 3,660 bushels of grain, including wheat, oats and barley. The garden produced all the vegetables used on the school tables.

Industries Taught.—All the boys are taught the care, feeding and driving of horses and the feeding and care of cattle and hogs. They are also given practical instruction in the use of farm implements, machinery and garden tools.

Carpenter's Shop.—Six boys received instruction in this department. Besides doing a great deal of repairing of the farm implements and machinery, they have done such new work as making tables, chairs, sashes, doors, whiffle-trees, neck-yokes, wagon-axles and poles, gates, stairs, ladders and numerous small articles. They have also helped in the painting of the principal's residence, school floors, and on many of the repairs.

Printing Office.—A monthly paper, *Progress*, is printed at the school. The type-setting and mechanical work is done by the boys. Some of the ex-pupils who have learned typesetting in this office are earning good wages in newspaper printing offices. The work is useful in connection with the class-room, as the printer boys are found to make most rapid progress in spelling and English composition.

Engine-room.—Six boys have received instruction in the care and running of the steam-engine. Three of these passed their examinations before the provincial government's examiner and have received engineer's papers.

Girls' Department.—All the girls learn cooking, baking and sewing; also laundry work. In the sewing-room they learn to cut and fit their own dresses. Some of them are given instruction in the care of the sick, bandaging and dressing sores or wounds.

Moral and Religious Training.—When the weather is favourable, pupils and staff attend the service on Sunday morning in the Presbyterian church, Regina. Sunday school is held in the school-room every Sunday afternoon, and service in the evening. Staff and pupils assemble each evening in the school-room for prayers.

Health and Sanitation.—The general health of the staff and pupils has been very good. Some of the pupils who had scrofulous enlargements were operated on with marked success by the school physician, Dr. W. A. Thompson.

Waste-paper, rubbish and floor-sweepings are burned in a dust flue. Bandages, &c., used in dressing sores, are burned when removed. Rooms that have been occupied by the sick are disinfected, even if the illness has been only a minor one.

Thorough ventilation of all rooms is regarded as very important. Outdoor exercise for all pupils is insisted on daily.

Water Supply.—Water of an excellent quality is obtained from wells at a depth of 95 feet.

Fire Protection.—Drills are given with a view to getting pupils quickly out of the building. There is a McRobie extinguisher, 6 Stempel extinguishers, a number of hand-grenades and dust extinguishers.

Heating and Lighting.—The main building is heated by steam from a 30 horse-power boiler, in the basement. The laundry, carpenter-shop, printing-office and bakers' shop have to be heated by stoves. The light used is acetylene gas. The cost of lighting is greater than with oil.

Recreation.—During the summer the boys play football, baseball and other out-door games; the girls play basket-ball. In the winter skating, hockey and coasting are the principal outdoor sports.

A magic lantern and a brass band are used to advantage, both for instruction and recreation. In winter many indoor games are played under the direction of one or more of the staff. Singing is encouraged and occasionally concerts are given, most of the programme being given by the pupils. Nearly all are musical and sing well.

General Remarks.—The school has many visitors during the summer months. People from eastern provinces, and also from Europe, who chance to stop off in Regina, take advantage of the nearness of the school to see Indians and note the

educational work that is being done among them. Most of these visitors express surprise that our pupils speak English so well, and that many of them are so apt in their studies and in their work.

The farm and garden give the boys the kind of training they will need in after years. Special attention has been given to the teaching of good horsemanship. As many of them come from homes where the horse is abused, the aim is to teach them to feed, groom and drive carefully, as well as to treat with kindness the animals under their care.

During the past summer new water closets, baths and pneumatic water tanks were put in.

In closing my report, I wish to express my appreciation of the good will and courtesy shown me by the agents and others in the department's service, with whom I have come in contact on various reserves during the year; also of the courtesy and interest of missionaries on these reserves and of principals of day and boarding schools; also of the very loyal support and earnest work done by the different members of the staff of this school.

I have, &c.,

R. B. HERON,
Principal.

SOUTH SASKATCHEWAN INSPECTORATE,
BALCARRES, SASK., May 12, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my fourth annual report on the schools inspected by me during the last fiscal period.

QU'APPELLE INDUSTRIAL SCHOOL.

I inspected this institution between April 16 and May 11. At the time of my inspection the staff was as follows: Rev. J. Hugonard, principal; Rev. J. Ruell, asst. principal; C. J. Harrison, clerk; E. N. Phaneuf, senior teacher; M. O'Connell, junior teacher; J. Brown, carpenter instructor; J. R. Richer, shoemaker instructor; J. B. Lafleur, baker instructor; W. Peltier, farm instructor; H. Charbonneau, blacksmith instructor; E. Donnelly, tinsmith, and 10 sisters, belonging to the order of Grey Nuns.

I began my inspection in the office, and found that there was an enormous amount of work to go over, caused by the rebuilding of the school. I found the office work in fair order.

I found the buildings throughout in the best of order, and everything about the interior of the institution was neat and clean. I visited the dormitories several times during my inspection and always found them in the same clean and tidy order.

At the time of my inspection there were 235 pupils in the school: 112 boys and 123 girls.

The classes were graded as follows:—

	Boys.	Girls.
Standard I	44	49
" II	27	16
" III	19	25
" IV	22	20
" V	0	10
" VI	0	3
	112	123

There are 4 teachers looking after the above classes. I visited the 4 class-rooms and heard the children go through their different exercises, some of the scholars were particularly bright.

The boys are detailed off to the different trade-shops, and to the farm, each day, and they receive a good training in the trades and farm work.

This institution has a large farm in connection with it. The following is a list of acreage under crop last year: wheat, 125 acres; oats, 125 acres; barley, 20 acres ; potatoes, 20 acres.

The grain did not turn out at all well, the sample being badly frozen. The threshing results were as follows : wheat, 3,250 bushels ; oats, 2,495 bushels.

This school is lighted by gas, and the plant is giving perfect satisfaction. The school is heated by steam.

The fire-protection is up to date. On each of the buildings there are 2 fire escapes, with hand rails and flat treads, so that the smallest child can come down in safety. On each of the flats, 12 in all, there are McRobie fire-appliances, as well as water connections and separate hose.

A night watchman makes from 3 to 5 rounds with a clock, visiting 16 stations.

Dr. Harvey was the medical officer in charge of the school. There was very little sickness at the time of my inspection.

CROWSTAND BOARDING SCHOOL.

I inspected this institution on June 27 last. The school is under the auspices of the Presbyterian Church, and under the principalship of the Rev. Wm. McWhinney.

At the time of my inspection there were 48 pupils on the register; 22 girls and 26 boys. The children were graded as follows:—

Standard	I	15 pupils.
"	II	12 "
"	III	11 "
"	IV	7 "
"	V	3 "
		48 "

The children were well advanced with their work, although I found it difficult to hear them speak.

The class-room was neat, clean, and well ventilated. I sounded the fire-alarm when in the room, the children dropped their books, fell in promptly, and the room was emptied in 30 seconds.

Since my last report fairly good fire-protection has been provided by the department. The attic contains a tank which holds about 30 barrels of water, and from the tank there is a stand-pipe with connections on each flat.

I found the children in this school well clad, in fact they were receiving the very best attention.

The half-day system of work in the class-rooms is followed in this school with good results.

The girls are taught sewing and mending, making bread, butter, and other domestic work.

The school has an up-to-date and well managed farm in connection with it, and the Indian boys get a thorough training in this line.

I found the school and surroundings in first-class order, all presenting a neat and tidy appearance.

The doctor tells me that there has been very little sickness in this institution during the past 12 months.

Since my last report an hospital annex has been built, which will be a great convenience in looking after the sick.

The principal and staff are very energetic, and the results of their labours are clearly shown.

WHITE BEAR'S DAY SCHOOL.

I inspected this school on November 12. At the time of my visit there were 13 children in the various classes, graded as follows:—

Standard	I.	5 pupils.
"	II.	2 "
"	III.	2 "
"	IV.	4 "
		13

I found the class-room scrupulously clean and well ventilated. The children were well clad and tidy. Miss Armstrong, the teacher, is very energetic, and the result of her work is very plainly seen. I consider the school has made great advancement since my last inspection.

REGINA INDUSTRIAL SCHOOL.

I inspected this school between November 26 and December 16 last.

The staff of this institution is as follows:—

R. B. Heron, principal; F. F. McRae, teacher; J. A. Tupp, mechanical instructor; H. Vanderveen, farmer; J. Rhodes, fireman; F. Moffatt, matron; A. G. Rowles, asst. matron; M. Childerhouse, cook; K. Henry, laundress; M. Johnston, seamstress; Dr. Thomson, medical officer.

At the time of my inspection there were 64 children enrolled.

The following is a list of the grain and garden stuff produced at the school last season:—

Oats, 3,000 bushels; wheat, 134 bushels; barley, 127 bushels; carrots, 6 bushels; potatoes, 100 bushels; turnips, 120 bushels; parsnips, 10 bushels; hay, 40 tons.

About 45 acres of land were summer-fallowed last season.

I tested the McRobie fire-extinguisher, which proved to be satisfactory.

The dormitories are ventilated through the windows, and at the time of my visit the windows were open and there appeared to be an abundance of fresh air.

I inspected the class-room; there were 20 children present at the time, it being afternoon session. I found the boys and girls bright, and they went through their exercises intelligently.

The main building is very much in need of repair, particularly in the boys' section, where a great deal of new flooring is required.

Dr. Thomson informed me that the general health of the pupils had been very good throughout the year.

FILE HILLS BOARDING SCHOOL.

This school is under the auspices of the Presbyterian Church, and is situated at File Hills.

The staff of this institution is as follows: Miss K. Gillespie, principal; Miss J. R. Gillespie, matron; Miss Mabel Timms, asst. matron; Miss J. Cunningham, teacher; Miss Fanny Ross, cook; Mr. Jas. Strath, farm instructor.

I made a thorough inspection of this school on January 24 last, and found everything scrupulously clean and tidy. I found the rooms well ventilated, as I have invariably found them on my previous visits.

The girls sleep in 3 rooms, in individual beds, and of the boys in the institution, 6 sleep in a large room having 4 windows. One of these windows ahd the sash removed, and the opening covered with cotton, and this ventilated the room splendidly. The older boys sleep in a large double tent fitted up with a floor and individual cots.

Each child in the school has his or her own wash basin, towel, brush and comb. This goes to show that great precaution is taken from a sanitary point of view.

The children were all comfortably clad and with one exception all were in perfect health.

The class-room had just been freshly painted and looked bright and cheerful. The room was ventilated with windows, opening at the top.

The classes were graded as follows:—

Standard	I	14 pupils.
"	II	4 "
"	III	6 "
"	IV	4 "
		28 "

The children were exceedingly bright, and I was really surprised at the advancement made since my previous inspection. I have visited a number of white schools in this province, and there are few that can show a brighter lot of children than are at this school.

The department is fortunate in having such a qualified teacher as Miss Cunningham, who, before she came to File Hills, was a principal in one of the Winnipeg public schools.

The school had a fine garden last year, which was a treat to see. All the work is done by the boys and girls.

I found the stables in excellent order and the horses and cattle in good condition. The boys are taught farming under a most competent instructor. The boys who have graduated from this school are to-day among the most progressive farmers we have. While at the school they were well drilled in the management of horses and cattle, and this training has had a lasting effect upon them.

I have, &c.,

W. M. GRAHAM,
Inspector of Indian Agencies.

PROVINCE OF SASKATCHEWAN,
NORTH SASKATCHEWAN INSPECTORATE,
PRINCE ALBERT, April 13, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report on the inspection of Indian schools for the year ended March 31, 1908.

EMMANUEL COLLEGE.

This institution is located west of Prince Albert, about 2 miles from the city limits.

The inspection was made on June 8 and September 28, but I also visited the school on several other occasions during the year.

At my first visit of inspection the staff was complete and included Rev. James Taylor, as principal; W. J. Radford, teacher; Roderick Campbell, farmer; Miss C. Sutherland, matron; Miss Swan, assistant matron, and Miss Jones, cook. Since that time the officers have been changed throughout with the exception of the principal.

Since the previous inspection the attendance had fallen off in some degree, as is indicated by the following statement:—

Pupils enrolled January 1, 1906	54	
Admitted since	6	
Total		60
Discharged	9	
Died	4	
Deduct		13
Enrolled September 30, 1907		47

Latterly, however, the attendance has been largely recruited, and at the present time there are about 60 pupils enrolled, while the authorized attendance, for which a grant is allowed, is but 52.

The attendance is drawn from 6 reserves in this locality, on all of which day schools are also maintained, and the attendance in this institution is nearly equal to the agregate attendance in the day schools referred to.

Since midsummer the classes have been in charge of Mr. C. J. Sproule, a teacher with the necessary experience and qualifications and devoted to his work. At the time of inspection the pupils were classified as follows:—

	Boys.	Girls.	Total.
Standard I	6	10	16
" II	4	3	7
" III	5	11	16
" IV	3	0	3
" V	4	1	5
Total	22	25	47

The pupils are diligent in their studies and other duties and are generally respectful toward the officers in charge of them. A simple course of military training and physical exercises conducted under the direction of the teacher is producing a beneficial effect among the boys.

The buildings are but poorly adapted to their present use, and the boys' residence especially is in a very bad state of repair.

Heating is effected by means of a furnace and several stoves. Though there is no regular system of ventilation, yet throughout the buildings generally the air is kept in a fairly fresh and wholesome condition by the constant use of doors, windows and chimneys. The girls' dormitory, however, affords less than 200 cubic feet of airspace, per occupant, and is so badly constructed that it is quite impossible that good ventilation should be maintained at all times.

The accounts of the institution are kept with the greatest accuracy; but owing to the high cost of various supplies, it has been found impossible to maintain the school upon is ordinary revenue.

DUCK LAKE BOARDING SCHOOL.

This institution was inspected on November 4 to 9, 1907, and on March 12, 1908.

Rev. O. Charlebois, O.M.I., is principal, and has the assistance of a boys' guardian, a farmer, a carpenter, and a general assistant; and 3 reverend sisters, whose

duties include teaching, care of the health and comfort of the children, and the direction of all the domestic industries.

The enrolment of pupils is shown as follows:—

Pupils enrolled January 1, 1906	102	
Admitted since	23	
Total		125
Discharged	17	
Died	7	
Deduct		24
Enrolled September 30, 1907		101

Of these pupils, 18 are not in treaty; while the remaining 83 are contributed by 12 different bands of Indians; Beardy's, One Arrow's and Petaquakey's bands, which have no day schools on their reserves, sending respectively 25, 20, and 17 children, to this institution.

Sisters Mary Augustin and Mary of the Cross have charge of the senior and junior class-rooms respectively, and their duties are limited almost solely to the work of teaching, a condition favourable, if not essential, to the most successful work.

While all branches of training receive their due attention, nothing is allowed to interfere with the daily work of the class-room, which is conducted with system and thoroughness.

The pupils of the senior division were examined in reading, literature, grammar, composition, history, geography, nature study, physiology and hygiene. In all they answered and performed their exercises with intelligence and with a fair degree of confidence, giving many evidences that their knowledge had not been acquired merely by rote, but that their studies have developed in a satisfactory measure the power to think independently or to follow up suggested trains of thought.

The junior division is kept well employed, both in class and at the desk. They show a lively interest in their work, are attentive and obedient, and are making satisfactory progress.

The training of the girls in sewing, cooking, and general housework is very exact, and is carefully adapted to their different ages.

The class-rooms are large and well lighted, and afford ample accommodation for the present attendance. The dining-room also affords liberal space for all, and the facilities for cooking, baking, and laundry work are quite equal to present requirements. The girls' dormitory is commodious, affording 500 cubic feet of air-space per occupant, and the boys' dormitory, as recently enlarged, is of about equal dimensions.

The building is heated with hot air by means of 3 furnaces and a number of stoves. Three aeolian ventilators have lately been installed, communicating directly with the dormitories, but affecting to some degree the ventilation throughout the building. These are giving good satisfaction, and the ventilation is good.

Suitable recreation space, indoor as well as outdoor, is now provided for both boys and girls; and on the whole the conditions affecting the health of the pupils are as nearly perfect as may be had in an institution of this kind.

Although the building is of wood throughout, and during winter many fires have to be maintained in furnaces and in cooking and heating stoves, yet in the event of fire, however destructive it might prove to property, there would be the least possible danger to life, as the means of escape are convenient and sure. An effective fire-drill is also maintained.

Farming, gardening, and stock-raising continue to be carried on with great advantage, and at the local agricultural exhibition held in October last, the school was awarded 28 first and 13 second prizes.

BATTLEFORD INDUSTRIAL SCHOOL.

Brief visits were made to this institution in August and again in January.

The staff includes Rev. E. Matheson as principal; Vernon L. Denton, teacher; Alex. Cunningham, farmer; F. F. Warren, carpenter; Chas. J. Gill, night watchman; Miss A. E. Edwards, matron; Miss Annie Edge, assistant matron and nurse; Miss Helen Hayes, seamstress; Miss Winifred Longhurst, cook; Miss Janet McArthur, boys' matron; Miss Gladys Barnes, laundress; and Mrs. C. A. Cunningham, baker.

The attendance has improved somewhat since last inspection, notwithstanding that a considerable number have been discharged:—

Enrolled January 1, 1907	55	
Admitted since	21	
Total		76
Discharged	11	
Died	4	
Deduct		14
Enrolled March 31, 1908		62

Much difficulty has been experienced in securing the servics of a wll qualified teacher; several have been tried for short periods; Mr. Denton has been engaged quite recently, and I have not had an opportunity of examining the classes since he took charge.

In their class work the pupils are graded as follows: standard I, 24: standard II, 6; standard III, 23; standard IV, 8; standard V, 1.

Many minor improvements have been made to the main building and the equipment, including new baths, tanks and plumbing in the bath-rooms, new floors in many parts of the building, and a complete set of new patent desks in the school-room.

JOHN SMITH'S DAY SCHOOL.

This school was inspected on June 28, 1907.

There were 18 pupils present, 20 enrolled, and 21 of school age on the reserve. There were 198 days of school in the preceding 12 months, and an average attendance of 9 pupils daily, during that period.

Since the last inspection, 3 teachers had been in charge, for periods of 6, 9, and 3 months respectively. They are all graduates of the Indian schools, and one of them, Edward Ahenakew, held a second-class non-professional certificate, the others having no certificate of standing. All lacked special training for their work, and the want was plainly visible in the results. One had been teaching for 16 years, but in this instance, as frequently, the effect of long experience had merely been to confirm the use of defective methods, especially in the absence of any devotion to the work, or any inclination toward intellectual pursuits.

The building is of suitable dimensions, well finished and in good repair. It is well lighted, comfortably and suitably furnished, and kept in tolerably good order.

JAMES SMITH'S DAY SCHOOL, NORTH.

The inspection of this school was made on June 25, 1907.

There were 20 pupils present, 29 enrolled, 194 days of school in the preceding 12 months, and a daily average attendance for this period of slightly over 10 children. The average attendance for the June quarter was 14 pupils.

There had been 4 teachers in charge, for varying periods, since my last inspection, none of them holding any recognized certificates of qualification.

The present teacher, Mr. Melville Leffler, though at a serious disadvantage for lack of normal training, has some experience, is zealous in the discharge of his duties, and has much influence over both pupils and parents. Some progress was found in the classes.

In the matter of conduct and obedience there is some room for improvement; the discipline is not exact.

The building is comfortable and properly furnished, the grounds clean but unfenced.

JAMES SMITH'S (FORT À LA CORNE) DAY SCHOOL, SOUTH.

The inspection was made on June 27, 1907.

There were but 2 pupils present at inspection, 10 enrolled, and a daily average attendance for 12 months of 6 pupils. School was open 215 days during this period. Three pupils live at a distance of 3 miles from the school.

Mrs. Godfrey, who has been in charge of this school for the past 4 years, holds no certificate of qualification recognized in this country; but she has had some experience in primary work in England. She maintains a deep interest in her work, is alert to encourage merit and to check misconduct, and employs many effective devices for arousing the interest of her pupils and of the parents.

The 2 pupils who were present showed a marked improvement in the use and pronunciation of English and readiness in answering.

There is a great variety of pupils' work on hand, sewing, knitting, patching, drawing, writing, paper-folding, &c.

Exercise-books, containing pupils' lead-pencil work, are carefully examined, corrected, and preserved.

The school was well equipped with furniture and school material. All stationery and other government property is carefully handled and kept in good order.

A school ground, one acre in extent, is surrounded by a wire fence. In one corner of the inclosure, a garden is cultivated by the children, under the teacher's direction.

STURGEON LAKE DAY SCHOOL.

The school was inspected on December 5, 1907.

There were 10 pupils present, which is the total number on the roll. There were 106 days of teaching in the twelve months ended September 30, and an average attendance during that period of nearly 7 pupils.

The school was closed for about half the usual teaching days of the year owing partly to sickness on the reserve and partly to the want of a teacher.

On November 11, the school was placed in charge of Mr. Robert Bear, a member of John Smith's band, and an ex-pupil of the Battleford industrial school, an industrious young man, but without training or experience. For 4 or 5 months during the summer the school was in charge of Edward Ahenakew, a teacher of some ability as well as enthusiasm in his work, who even within this short time brought about a noticeable improvement in the tone of the school.

The school is situated at 'The Narrows,' near the centre of the reserve. There are about 25 children of school age in the band, but so scattered are their homes that many are from 3 to 6 miles distant from the school and a full attendance could be had only by providing a conveyance.

For children who are but poorly fed at home, a wholesome noon meal is of great value in connection with the school, and a great encouragement to parents to send their children regularly. This is a matter that has been to a great extent neglected here and, indeed, at the majority of the schools.

The school is properly furnished with patent desks, blackboard of excellent quality, and all other necessary equipment; but the walls are without decoration of any kind and look very bare and barn-like.

AHTAHKAKOOP'S DAY SCHOOL.

This school was inspected on December 19. I found it still in charge of Mr. Louis Ahenakew, who has conducted it with but slight interruption for about 13 years past.

There were 14 names entered in the register, and 11 pupils were present at inspection. There were 208 days of school in the 12 months preceding, and a daily average attendance for this period of nearly 9.

With special training for his work Mr. Ahenakew would have made an excellent teacher for any school under such conditions. In the work of the class-room he is diligent and displays much energy, and by this means the school continues in a fair state of progress. The classification of the pupils is as follows:—

Standard I.	7 boys.	2 girls.	Total..... 9
" III.	3 "	1 "	" 4
" IV.	0 "	1 "	" 1
Total.	10 "	4 "	" 14

The building is suitably furnished, comfortably heated, and well lighted. I found it only moderately clean; it is regularly swept but seldom scrubbed. The location is healthful and picturesque, overlooking the Sandy lake, a beautiful, clear sheet of water.

BIG RIVER DAY SCHOOL.

The school was inspected on December 20, 1907. There were 11 pupils registered, and all were present at inspection. There were 164 days of school in 12 months, and the average attendance for that time was slightly over 7 pupils.

School was closed for some 50 teaching days for want of a teacher. On October 21 it was placed in charge of Mr. Robert G. Crain, an untrained and inexperienced man. He is a man of good character and exemplary habits, and may be relied upon to exert a good influence among these people, a band of half-Christianized Indians; but, however important this may be, it cannot take the place of scholarship and training in the school-room.

In all 4 teachers had been in charge for brief periods during the preceding 18 months, none of them duly trained, and only one holding any standing as to scholarship.

MISTAWASIS DAY SCHOOL.

This school was inspected on December 23, and again on January 29. There were 9 pupils present on the former occasion and 11 on the latter, while the total number enrolled was 16. There were 180 days of school in the 12 months ended December 31, 1907, and an average attendance of about 7. There were also 6 non-treaty children in attendance.

In class work the pupils were graded as follows :—

Standard I.	3 boys,	3 girls,	total	6
" II.	4 "	1 "	"	5
" III.	1 "	3 "	"	4
" V.	0 "	1 "	"	1
Total.	8 "	8 "	"	16

Of the non-treaty children 1 is in standard I, 3 are in standard IV, and 2 are in standard V.

Mr. C. W. Bryden, the teacher, who has been in charge for nearly 3 years, is the holder of a first-class professional teacher's certificate and is a graduate in Arts of Dalhousie University.

There is a distinct and uniform progress throughout the classes. Through the influence of the teacher and the presence of several bright white children, the Indian pupils have thrown off to some extent their natural diffidence and Indian manners and accent, and act and recite like pupils of a white school.

The interest of parents and children in the school, and the regularity of the attendance, are maintained in a great measure by means of a liberal distribution of free clothing from the mission, of which Mr. Bryden is in charge, whereby pupils are prevented from absenting themselves owing to lack of warm covering. In addition to this, there is maintained in connection with the mission a small home, where all the Indian children of school age except those who live nearest are housed and fed during the school days of each week. This is a help to parents that is much appreciated, while the children are home often enough to engage the interest of their parents in their education and general well-being.

SIOUX MISSION (WAHSPATON) DAY SCHOOL.

This school is located on the Wahspaton (Sioux) reserve, about 9 miles northwest from Prince Albert.

It was inspected on December 4 and 17.

There were 9 pupils enrolled, 3 present on my former visit and 4 on the latter occasion. There were 220 days of school in the 12 months, and a daily average attendance of 4 pupils. The school population of the reserve consists of the 9 who are enrolled, and 3 of these are only temporary residents, being visitors from the Moose Woods reserve.

The children are bright and learn quickly under favourable conditions; but the parents are indifferent as to sending them regularly or punctually, and their progress is but slight. They are classified as follows : —

Standard I	2 boys,	2 girls,	total	4
" II	2 "	2 "	"	4
" III	0 "	1 "	"	1
Total	4 "	5 "	"	9

Mr. J. Beverley, who has been in charge for 2 years past as teacher and farmer, holds no certificate of qualification as to scholarship or training. His methods in the class-room are defective, and his efforts to some extent misdirected; but he is very energetic in everything he does, and having secured a fair influence over both children and parents, he is overcoming theirin difference in a measure and accomplishing some useful work.

GENERAL REMARKS.

Four boarding schools and 5 day schools within this inspectorate were not visited by me during the year.

I have, &c.,

W. J. CHISHOLM,

Inspector of Indian Agencies.

PROVINCE OF ALBERTA,
BLOOD C. E. (ST. PAUL'S) BOARDING SCHOOL,
FORT MACLEOD, May 19, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of the Blood (St. Paul's) Church of England boarding school.

Location.—This school is situated some 14 miles southeast of Macleod, which is our mailing office. The school is opposite the agency headquarters, and is separated from it by the Belly river. The school property is not on the reserve, and is owned by the Church Missionary Society, London, England.

Land.—The land, which is prettily situated and well watered, comprises 160 acres. Its natural features are very pronounced. On the north and east it is bounded by the Belly river; on the south and west it is surrounded by trees. The soil is a light loam and admirably adapted for farming and gardening.

Buildings.—The buildings present a pleasing appearance. They are built around a square, which forms an excellent playground. At the northwest corner is the girls' home, while the boys' home is on the south side. A new building for the boys is sadly needed.

Accommodation.—There is room for 70 pupils and a staff of 10.

Attendance.—The attendance has been very regular. The number on the roll is 41.

Class-room Work.—Good progress has been made in this department.

Farm and Garden.—We harvested 30 acres of oats, 400 bushels of potatoes, 5000 pounds of mangolds, 8,000 pounds of turnips, 1,000 pounds of red and white carrots, 300 pounds of cabbage, 200 pounds of parsnips, and 300 pounds of onions. I have 5 acres of land in trees and although this requires much attention and extra labour, it nevertheless repays. Last spring 2,900 saplings were planted.

Industries Taught.—The boys learn farming and gardening; the girls are instructed in housekeeping, cooking, butter-making, dressmaking, darning and fancy-work.

Moral and Religious Training.—The pupils receive definite church teaching. Matins and evensong are said daily.

Health and Sanitation.—We have had no sickness. Everything possible is done from a sanitary standpoint. Pits are disinfected regularly.

Water Supply.—We have 4 excellent wells.

Fire Protection.—We are better off than we were last year. Hand-grenades have been supplied.

Heating and Lighting.—The buildings are heated by hot-air furnaces and stoves, and lighted with coal-oil lamps.

Recreation.—Sports are encouraged. Football, cricket, boxing, swimming, and outdoor gymnastic work are indulged in by the boys. The girls are regularly taken for walks and enjoy themselves in less strenuous games than the boys.

General Remarks.—Last spring I adopted a plan which proved a decided success. I had land prepared and laid out 16 flower-beds for our girls. They seeded the garden and looked after its cultivation entirely. They were amply repaid for their work.

Last February I started a drum and fife band, which promises well. The boys are intensely in earnest. I have also a cadet corps and have applied for official recognition, which I am likely to receive.

I have, &c.,
GERVASE EDWARD GALE,
Principal.

PROVINCE OF ALBERTA,
BLOOD R. C. BOADRING SCHOOL,
BLOOD RESERVE, STAND-OFF P.O., March 25, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

Location.—The school is situated about 20 miles south of Macleod, 1 mile from the upper agency, within a few yards of the Belly river, on the Blood reserve.

Land.—The land connected with the school belongs to the reserve. A few acres, about forty, have been fenced off, portions of which are under cultivation, the rest kept as a pasture-field.

Buildings.—The buildings are as follows: 1. The main building, 36 x 36 feet, 3 storeys high, divided into an office, parlour, refectory, class-room, working-room, and 2 recreation-rooms on the ground floor; boys' and girls' dormitories, the chapel and private apartment for the staff on the second floor. 2. There is also situated behind the main building and adjacent to it a three storey building, 20 x 20 feet, comprising kitchen and pantries and 2 large rooms reserved for the use of the nuns. 3. The other buildings are, a laundry, 18 x 14 feet, a storehouse and a stable.

Accommodation.—There is accommodation for 50 pupils and a staff of 8.

Attendance.—There are 48 pupils on the roll, 20 boys and 28 girls.

Class-room Work.—The programme of studies prescribed by the department is followed as closely as possible. The progress is noticeable.

Farm and Garden.—About 3 acres are cultivated as a garden, and potatoes, turnips, carrots, beets, peas, and lettuce are successfully grown. A farmer, our neighbour, ploughed for us 2 acres more last fall, and these 2 acres are to be used for sowing potatoes this spring. Both boys and girls take part in the work under the supervision of the nuns.

Industries Taught.—Gardening, stable work, milking, baking, glazing and sawing wood for the kitchen, form the principal occupations of the boys. The girls are trained in all the branches of domestic work, baking, cooking, laundrying, sewing, knitting, and dressmaking. All the children's clothing is made in the school.

Moral and Religious Training.—The children are taught to say their prayers every morning and evening; they have catechism each day, we do the best we can in that respect, and all the children attend the church services very regularly.

Health and Sanitation.—The health of the children has been fairly good this year, no deaths occurred. The sanitary conditions are looked after carefully, everything is kept clean around the house and the outbuildings. The pupils get as much outdoor exercise as is practicable, and frequent baths are taken.

Water Supply.—Plenty of good water is supplied from a well near by.

Fire Protection.—Five fire-extinguishers, 4 hand-grenades, a few fire-pails, and 4 fireman's axes are distributed throughout the halls and the rooms. The latest instructions received from the department in regard to the fire drill and the re-hanging of the doors have been carried out.

Heating and Lighting.—The school is heated by 2 hot-air furnaces, and light is supplied by coal-oil lamps.

Recreation.—Recreation is taken 3 times a day, after each meal. Football, swimming, fishing, shooting with bows and arrows, swinging and skating are the favourite

pastimes of the boys, they have also a few other little games of their own. The girls too, have different little games, such as swinging, playing ball and skipping.

Boys and girls have their own playgrounds and are always under the supervision of an attendant.

I have, &c.,
J. M. SALAUN, Priest,
Principal.

PROVINCE OF ALBERTA,
BLUE QUILL'S BOARDING SCHOOL,
SACRED HEART P. O., April 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to forward the annual report of our school for the fiscal year ended March 31, 1908.

Location.—The school is situated about 6 miles southwest of Saddle Lake, and 1 mile north of the Saskatchewan river.

Buildings.—The school is a frame building, 60 x 30 feet, two and a half storeys high. The outbuildings consist of a bakery, laundry, storehouse, stables, and several smaller buildings.

Attendance.—The pupils attend school regularly, all being boarders at the institute.

Class-room Work.—The course of studies authorized by the department is faithfully followed.

Garden.—About 6 acres are under cultivation, and potatoes, turnips, carrots, cabage, &c., are successfully grown.

Industries Taught.—The boys have special hours for manual work. They work in the garden, saw wood, and help in caring for the cattle. The girls are taught sewing, mending, knitting and the various kinds of housework.

Moral and Religious Training.—Special care is paid to moral and religious training, discipline and order.

Health and Sanitation.—The general health of the pupils has been good during the year.

Water Supply.—The department having kindly furnished a horse-power sweep, we have no trouble in obtaining a sufficient supply of good water from a well near the school.

Fire Protection.—Four chemical fire-extinguishers, ladders and pails are kept in readiness.

Heating and Lighting.—The school is heated by means of stoves. Coal-oil lamps are used for lighting purposes.

Recreation.—Pupils have recreation three times each day, after meals, during which they indulge in the usual outdoor games.

I have, &c.,
LEON BALTER,
Principal.

PROVINCE OF ALBERTA,
CROWFOOT BOARDING SCHOOL,
BLACKFOOT RESERVE, GLEICHAN, May 10, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location.—This school is situated some 10 miles from Gleichen post office, within a few yards of the Bow river.

Land.—There are about 15 acres under cultivation for the use of the school. It is government land, being a part of the reserve, and is fenced in with the permission of the department and the consent of the Indians.

Buildings.—The main building, 36 x 36 feet, is 3 storeys high, the third storey of which is not yet completed.

There are 2 wings to the main building, 2 storeys high, 36 x 32 feet.

Behind the main building and adjacent to it, is a 2 storey building, 50 x 20 feet.

The buildings are divided into an office, reception-room, refectory, kitchen, pantry, milk-house, storehouse, laundry, school-room, sewing and recreation rooms on the ground floor; while upstairs are the dormitories, chapel, dining-room for the staff, and 2 rooms used for hospital purposes in case of any contagious disease.

The outbuildings are 2 stables, an implement-shed, and a root-house. A well kept picket fence surrounds the main building, and an ordinary wire fence serves for the same purpose around the garden, pasture and field.

Accommodation.—Under present arrangements, there is accommodation for 60 pupils and a staff of 8.

Attendance.—There are 40 children on the roll, 26 boys and 14 girls. During the year 3 children were discharged and 7 others were admitted.

Class-room Work.—The programme of studies prescribed by the department is followed as closely as possible. The progress is very good and encouraging.

The grading of the pupils is as follows:—

Standard	I.	21 pupils.
"	II.	2 "
"	III.	10 "
"	IV.	4 "
"	V.	3 "

Farm and Garden.—Up to the present, very little farming has been done; the garden and potato-field providing enough work for the pupils during the summer. The larger boys do the ploughing, as well as the mowing, when the hay season comes.

Industries Taught.—The boys have special hours for manual work. They are thoroughly instructed in the different branches of farming and gardening. They are taught also dairy work and the care of the live stock. The girls are instructed in the culinary department, dressmaking, knitting and general housework.

Moral and Religious Training.—Great care and special attention are given to this most important part of education. Religious instruction is imparted to the pupils by the priest and the teacher each day, and it is very encouraging to see how many great efforts the children make in order to put in practice the lessons they are taught.

Health and Sanitation.—The general health has been very good, no deaths have occurred during the year. The sanitary conditions are looked after carefully and everything is kept clean around the house and the outbuildings.

Water Supply.—Our water-supply is drawn from the Bow river.

Fire Protection.—Fire-extinguishers, hand-grenades, fire-pails and fire-axes are distributed throughout the halls and rooms.

Heating and Lighting.—The school is heated partly with stoves, partly with one hot-air furnace, and light is supplied by coal-oil lamps.

Recreation.—Football, shooting with bows and arrows, fishing, swinging and skating, are the favourite pastimes of the boys; the girls amuse themselves in playing ball and croquet, skipping, &c.

I have, &c.,
J. S. LeVERN, O.M.I.,
Principal.

PROVINCE OF ALBERTA,
ERMINESKIN'S BOARDING SCHOOL,
HOBBEMA, April 3, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

Location.—The school is situated on the Ermineskin's reserve, a mile from the station of Hobbema, which is our post office.

Land.—About 40 acres of land is in use for the wants of the mission, 5 of which is taken up for the garden, 5 for the yard, and the remainder for pasturage.

Buildings.—The main building, 45 x 50 feet, has a school-room and refectory on the first floor; boys' dormitory, sewing-room and infirmary on the second floor; girls' dormitory on the third floor. The kitchen and chapel comprise another building, 25 x 20 feet, this joins the main building to the sisters' building, which is 30 x 24 feet. A laundry, 40 x 24 feet, is situated a few yards from the house and contains a lavatory, store-room, ice-house, and 3 bath-rooms on the first floor, while on the second floor there is a room for drying and ironing clothes, and a room used in case of contagious disease.

Accommodation.—There is accommodation for 75 children and 10 sisters.

Attendance.—The attendance was 58 children.

Class-room Work.—The programme of studies prescribed by the department is closely followed, the pupils have made marked progress in composition and in the English language.

Farm and Garden.—Our garden has yielded 950 bushels of potatoes, 250 heads of cabbage, also carrots, turnips and onions. We have in close proximity a large, convenient and well fenced pasture for the animals.

Industries Taught.—The boys are taught farming, and the girls are trained in all the branches of domestic work, dressmaking, knitting, fancy-work, &c.

Moral and Religious Training.—The pupils are carefully trained in this important part of education. Religious instruction is given daily by the missionary or the teachers. The conduct of the pupils is highly satisfactory.

Health and Sanitation.—Throughout the year the general health of the children has been good with the exception of 2 cases of pneumonia and one of consumption. The ventilation is good.

Water Supply.—The department has supplied us with a good artesian well, from which we obtain an ample supply of excellent soft water for the institution, the laundry, and the stable by means of a force-pump.

Fire Protection.—Two fire-escapes, 12 dry dust extinguishers, 1 hose, 6 pails, and 3 fire-axes, are our means of protection against fire.

Heating and Lighting.—Our rooms are lighted by lamps and heated by wood stoves.

Recreation.—The boys are fond of football, baseball, walks in the woods, skating and coasting. The girls enjoy swinging and berry-picking in summer. They delight in music.

I have, &c.,
P. MOULIN, O.M.I.,
Principal.

PROVINCE OF ALBERTA,
LESSER SLAVE LAKE (SAINT PETER'S) BOARDING SCHOOL,
LESSER SLAVE LAKE, May 11, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to forward my annual report for the fiscal year ended March 31, 1908.

Location.—The school is situated on the north side of Buffalo lake, in the Heart River and Salt Prairie settlement. It is not on an Indian reserve.

Land.—The land on which the school is situated belongs to the Church of England Mission and is about 84 acres in area. The land has a southern aspect, gradually rising up in the rear to the height of about 300 feet. It is adapted for general agriculture; all the cereals and ordinary vegetables are successfully grown on the land.

Buildings.—The buildings comprise one school building, 2 storeys, 55 x 35 feet, containing on the first floor a school-room, dining-room, kitchen, pantry and staff sitting-room. Upstairs is the principal's bed-room, boys' dormitory, matron's bed-room, girls' dormitory, and sewing-room. There is also a mission-house, 3 storeys, 32 x 24 feet; church; stable, 30 x 26 feet; cow-house, 20 x 24 feet; cattle-shed, 24 x 24 feet; implement-shed, 20 x 26 feet; granary and meat-house, 2 storeys, 18 x 20 feet; mission-house store, 15 x 18 feet; school store building, 2 storeys, 16 x 16 feet; carpenter-shop and stock cook-house, 20 x 35 feet; 2 other buildings, each 12 x 14 feet, occupied by blind and infirm Indians. All these buildings are shingle-roofed.

Accommodation.—There is accommodation for 30 children and a staff of 3.

Attendance.—The attendance during the season has been good. There were 24 boarders and 17 day scholars, making a total on the register of 41 pupils.

Class-room Work.—The ordinary public school subjects are taught and comprise reading, writing, arithmetic, geography, history, spelling, drawing, singing, scripture and religious teaching. The pupils have made good progress.

Farm and Garden.—There are about 24 acres of land under cultivation, which is sown in wheat, oats, barley and potatoes, besides a garden, in which are grown a plentiful supply of vegetables.

Moral and Religious Training.—The first half hour each morning is given to Biblical and religious training, also on rising from bed and at evening on retiring, the children go through religious exercise.

Health and Sanitation.—The health of the children throughout the entire season has been excellent. With the exception of colds, at long intervals, there has been no sickness, except in the case of one girl who is naturally delicate. She caught a severe cold and was sick about 3 weeks, but is now around as usual. Otherwise none of the children have missed school.

Water Supply.—The water is hauled from the river, about a quarter of a mile distant. Wells have been dug, but the water has been brackish.

Fire Protection.—We take the utmost care to keep the pipes and chimneys well cleaned, and use the greatest diligence in making these, with the stoves, as safe as possible. We have a supply of ladders, buckets, axes and water always on hand.

Heating and Lighting.—We use wood fires in ordinary stoves with stove-piping sufficient to distribute warmth throughout the building. We use ordinary coal-oil lamps for lighting purposes.

Recreation.—During recess and before and after school, the children pass the greater part of their time out of doors, and amuse themselves with football, base-ball, skipping and swinging. The boys do a considerable amount of sawing and chopping fire-wood each day.

I have, &c.,
WILLIAM H. TRICKETT.
Principal.

PROVINCE OF ALBERTA,
LESSER SLAVE LAKE (St. Bernard's) R.C. BOARDING SCHOOL,
LESSER SLAVE LAKE, July 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to forward my annual report for the year ended March 31, 1908.

Location.—This school is situated on the northeastern bank of Lesser Slave lake. The location is healthy and the view of the lake very fine.

Land.—The area of land connected with the school is about 9 acres, and belongs to the St. Bernard R. C. Mission.

Buildings.—The buildings are as follows: The main structure is 72 x 28 feet, 3 storeys high. The boys' house is 60 x 25 feet, 2 storeys high. The school-house is 35 x 24 feet, 3 storeys high. This year the doors of the dormitories were made to open outwards.

Accommodation.—The buildings can easily accommodate 12 sisters and about 60 children.

Attendance.—The classes have been as usual attended regularly.

Class-room Work.—The school-rooms are open twice daily, from 9 to 11.30 a.m. and from 1 to 4 p.m. The programme of studies is followed with great application.

Farm and Garden.—Both the boys and girls are glad in early spring to take out small stones and prepare the land for potatoes, onions, &c. Later on they help in weeding the gardens.

Industries Taught.—Sewing, knitting, dressmaking and washing are taught to the girls; while the boys learn farm work.

Moral and Religious Training.—Religion being the first part of education, and the strongest means of restraining passions, everything is done to please the children

confided to our care, under its gentle influence. The pupils are, in general, intelligent enough to understand the difference between civilized and barbarous life. We are happy to see them, little by little, leaving their savage customs to adopt those of enlightened nations.

Health and Sanitation.—The health of the children is in a very good condition. We were fortunate enough to keep from our doors all kinds of epidemics. Precautions are taken to ensure sanitary conditions. Good ventilation is provided, especially in dormitories and class-rooms.

Water Supply.—An abundant supply of water is obtained from a well and a small river flowing in front of the mission.

Fire Protection.—Ladders, outside stairs, and doors opening outwards can be used in case of fire.

Heating and Lighting.—The heating apparatus consists of a hot-air furnace, besides several stoves. Coal-oil lamps supply the light.

Recreation.—Football and bows and arrows form the favourite pastimes of the children during the summer months. Coasting and games in the school-room are the chief recreations during the winter.

I have, &c.,
C. FALHER,
Principal.

PROVINCE OF ALBERTA,
McDOUGALL ORPHANAGE AND BOARDING SCHOOL,
MORLEY, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ending March 31, 1908.

Location.—This school is situated in the Morleyville settlement, about 4 miles east of that part of the Stony reserve on the north side of the Bow river, and 1 mile east of the same. The location, so far as scenery goes, is all that could be desired.

Land.—The land consists of two parts; one is a grant by the Dominion government to the Methodist Church for educational purposes, and is known as lot No. 8, Belanger survey, this contains 1,137 acres, more or less. The other is owned by the government and has about 300 acres. This looks large and would lead to the opinion that there should be considerable income from such a large tract of land. It is, however, of a very gravelly nature and only fit for grazing purposes.

Buildings.—The buildings are as follows: Main buildings are frame upon stone foundations and consist of two wings; one of these was built about 18 years ago, and is 38 x 40 feet; the other, built in 1900, is 25 x 40 feet. The basements are all concreted and make fairly good play-rooms for the girls and boys when the weather is unfit for outdoor exercise. There is in each basement a bath-room and closet. These, unfortunately, cannot be used during the winter, as the heating apparatus is not sufficiently strong. On the ground floor are the kitchen, pantry, dining-room, boys' play-room, sewing-room, sitting-room, 2 bed-rooms and office. On the first floor are the girls' and boys' dormitories, farmer's room and bed-rooms for 4 lady members of the staff. Beside the main buildings and attached thereto are the laundry, store-room and dairy. The laundry has undergone thorough repair during the past year, while the store-room and dairy are all new. The school-room is a frame building

upon a stone foundation. This is situated 100 yards north of the main buildings and is 35 x 40 feet, providing ample accommodation for all the pupils. A driving-shed and implement-house, 20 x 40 feet, ice-house and cold storage, 12 x 20 feet, stables and blacksmith shop, comprise the entire outbuildings. The shop and stables are very old and in need of renewing.

Accommodation.—The accommodation is intended for 40 pupils and a staff of 7. There is no residence for the principal, so he and his family have to do the best they can by sharing part of the staff's quarters.

Attendance.—This is and has not been anything like what it should be. The lack of attendance is to be accounted for in more ways than one. First, there is a desire on the part of the Indian to have his children with him all the time, then they say 'your school is diseased and our children get sick and die,' and there are other excuses.

The average attendance is 30, with 39 upon the roll, as follows:—

Standard	I	19 pupils.
"	II	4 "
"	III	12 "
"	IV	4 "
Total		39 "

The smallness of the average is to be accounted for by truancy, with which we have great trouble, indeed, the children, we believe, are encouraged in this lawlessness by the parents and friends.

Class-room Work.—The class-room work is under the supervision of a qualified teacher, who is bringing the children along remarkably well; progress with the smaller children is more noticeable than in the higher grades.

Farm and Garden.—This is not a farming locality; our closeness to the mountains makes it impossible to do much along this line. The only attempt at farming is to plough, sow and reap for green feed purposes, and of this we raised about 60 loads last year. Gardening is only done on a very small scale, as the late and early frosts make general gardening out of the question. Cabbage, turnips, carrots, parsnips and potatoes, can, in good years, be raised with fairly good success. Last year we raised 200 bushels of potatoes and some of the other things.

Industries Taught.—In order that the boys of this reserve may be of some use in the future, some trades ought to be taught. Ranching is the only thing which we attempt to teach. The boys are taught to look after cattle, horses and pigs. The chief delight of an Indian boy is in looking after horses, or, perhaps more properly, in riding the broncho. The girls are instructed in all the branches of housekeeping, cooking and needlework; washing and general housework is done by them, under competent teachers. In all of these branches many of them become quite proficient. At the Calgary fair last year, there was an exhibit of the children's needlework in many designs, and great was their delight, when 3 first and 3 second prizes were taken by their work. They are anxious to compete at the Dominion fair next July; as to whether or not we shall indulge them in this we cannot at the present time say.

Moral and Religious Training.—This is one of the duties upon which we lay great emphasis, we feel that this is the time for sowing the seeds of truth in the hearts for these girls and boys. They are taught the truths contained in the word of God and the doctrines of the Methodist Church. None are engaged as members of the staff but those of good moral and religious character. There is morning and evening worship each day, and in addition thereto, service at 10.30 a.m. each Sabbath day in the church, about 2 miles from the school, Sunday school at 3.30 and service again at 7 p.m. This, with one service in the middle of the week, constitutes our religious services.

Health and Sanitation.—On the whole the health of the children has been fairly good; while this is true we have to record the death by that dread disease, consump-

tion, of 4 of our children: 3 boys and one girl. This disease is very prevalent, and it is this fact which makes the parents very unwilling to place their children in the school. The sanitary condition with the exception of the boys' dormitory is fairly good.

Water Supply.—There is plenty of good, pure water, supplied from a spring about ⅓ of a mile from the main building, connected by a 4-inch pipe. This pipe, however, is defective somewhere, which makes our supply unsatisfactory. This will have to be remedied during the summer.

Fire Protection.—Our fire-protection is not as good as is desired, owing to the above defect. We have all the appliances, such as pipes, hydrants, hose, grenades, &c.

Heating and Lighting.—The heating apparatus is unsatisfactory, stoves had to be used in the place of used-up furnaces. The light is that supplied by coal-oil lamps.

Recreation.—In order that the health of the children may be the best possible, we find that it is necessary to have as much outdoor exercise as possible; to this end we provide swings, basket-ball, football, baseball and all sorts of outdoor sports. Sometimes long walks are indulged in, which give the participants a keen appetite.

General Remarks.—I desire to place upon record my appreciation of the valued services of our agent, Mr. T. J. Fleetham. During the year he has been untiring in his efforts to make the institution a success. Dr. Lafferty quite frequently favours us with his friendly advice

I have, &c.,

C. B. OAKLEY,

Principal.

PROVINCE OF ALBERTA,
ST. JOHN'S HOMES—BLACKFOOT RESERVE,
GLEICHEN, April 24, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report of the St. John's homes (the Old Sun's and White Eagle's boarding schools) for the fiscal year ended on the 31st ultimo.

Location.—The homes are situated—the one at the north camp and the other at the south—about 10 miles apart, and within a few yards of the Bow river in each case. That at the north camp is known as Old Sun's school, and the other as White Eagle's. The post office, Gleichen, is less than 5 miles from Old Sun's and about 10 miles from White Eagle's school.

Buildings.—The Old Sun's school comprises the boarding school proper, the school-house, and the usual outhouses. The White Eagle's school is a more attractive and a better situated building than Old Sun's and was erected by us at the particular request of the south camp Indians (made through the Superintendent General) in 1894. Both buildings are in poor condition—no repairs having been undertaken (pending the department's arrangements for the permanent amalgamation of the two schools in a new building) since 1901.

Accommodation.—Each school is capable of accommodating about 40 pupils and a staff of 6.

Attendance—The number of pupils attending Old Sun's boarding school on the 31st ultimo was 15 boys and 16 girls.

Class-room Work.—The children have made very fair progress and take an interest in their work. Their general behaviour has been good.

Industrial Work.—About 3 acres of land have been worked by the boys under an experienced farmer, and a supply of vegetables more than enough for the needs of the institution has been raised by them. In addition they have been instructed in flower-gardening, and are carefully taught milking and the care of cattle and horses. They also learn to do simple repairs and to make themselves generally useful. The girls have been taught as usual the regular household duties, in which some of them are very apt. The older ones are also taught to mother the little ones in various ways.

Moral and Religious Training.—Regular instruction is given in this department of our work. Apart from the ordinary Sunday services—one of which is conducted altogether in the native language—the children receive definite religious instruction in Sunday school, and at morning and evening prayers each day, all which is supplemented by simple practical ethical instruction in and out of school. The children are very happy, and many of them show a true desire to live good and useful lives.

Health and Sanitation.—We continue to do everything in our power to keep up the health of the children and the staff and under the circumstances we have done remarkably well.

Water Supply.—The supply is abundant, but the condition of the subsoil through which it passes is more or less contaminated.

Fire Protection.—A number of fire-extinguishers and hand-granades are conveniently placed throughout the building, and buckets and tubs of water are kept where they can be easily got at in time of need. Axes also are kept ready for use. Fire-escapes outside the buildings are permanently connected with the dormitories, and are easy of access.

Heating.—The boarding school and school-house are heated by stoves only. Asbestos safes are used.

Recreation.—Every attention is given to recreation, and the children are kept as much as possible in the open air. This has been more than ever the case during the past fiscal year.

General Remarks.—It is interesting to note that it is now more than 20 years since we commenced boarding-school work on this reserve.

I have, &c.,
H. W. GIBBON STOCKEN,
Principal.

PROVINCE OF ALBERTA,
PEIGAN C. E. BOARDING SCHOOL,
PEIGAN RESERVE, PINCHER CREEK P.O., March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to submit my report on the above institution for the year ended March 31, 1908.

Location.—The school is situated on the banks of Pincher creek, on the north-east quarter of section 12, township 7, range 29, west of 4th meridian, and 2 miles from the Peigan agency.

Land.—The school owns 40 acres of land, being legal subdivision 9 of the section above mentioned.

Buildings.—The buildings consist of a boarding school proper, a laundry, stable, workshop, and other necessary buildings.

The boarding school proper is 78 x 32 feet over all. It is built of wood on a stone foundation, and is lathed and plastered throughout. It contains kitchen, dining-room, play-room and dormitories, bath-rooms for children, also rooms for the staff, as well as store-rooms.

Accommodation.—This school has accommodation for 40 pupils, viz.: 24 boys and 16 girls; also for a staff of 6 persons.

Attendance.—The attendance has been good, there being very few children of school age on the reserve.

Class-room Work.—Good progress has been made with all studies, especially English.

Farm and Garden.—The garden was as usual very profitable; we grew all the vegetables for the school; it consists of 2 acres. Five acres of oats were sown, and cut for green feed.

Industries Taught.—The boys are taught farming, including care of horses, cattle, pigs and poultry, bread-making, and to mend their own clothes, and attend to the work on their side of the school.

The girls are taught dressmaking, sewing, mending, darning and knitting. They assist with the washing and ironing; also general housework.

Religious Instruction.—Religious instruction is given both morning and evening; the pupils are taught to distinguish between right and wrong, and everything is done to lead them to a higher and better life.

Health and Sanitation.—The health of the pupils has been good on the whole; there were three cases of scrofula and consumption, all three proving fatal; all around the place is kept free from rubbish, and the children are taught to keep it clean.

Water Supply.—We have an excellent supply for household purposes from a drive well in the kitchen.

Fire Protection.—There are 12 fire tubes hung in the main rooms, but in case of fire there is no adequate water-supply nearer than the creek, 100 yards from the building.

Heating and Lighting.—The building is heated by 2 large Pease furnaces, which have been in use for over 10 years, and give every satisfaction.

The building is lighted with ordinary coal-oil lamps.

Recreation.—The pupils have ample yards to play in. The boys play football and other manly games; the girls have swings, and other games suitable for them.

I have, &c.,
(Rev.) W. R. HAYNES,
Principal.

PROVINCE OF ALBERTA,
PEIGAN (SACRED HEART) R. C. BOARDING SCHOOL,
PEIGAN RESERVE, MACLEOD P.O., April 17, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I beg to submit the following report of the Peigan (Sacred Heart) boarding school for the fiscal year ended March 31, 1908.

Location.—The Peigan (Sacred Heart) boarding school is situated on fine elevated ground, on the north side of Oldman river, a very healthy location, in the centre of the Peigan reserve. The post office address of the school is: Sacred Heart Boarding School, Peigan Reserve, Macleod, Alberta.

Land.—The land on which this school is built, belongs to the reserve. About half an acre is fenced in for a vegetable garden, on which we raise a fair crop, if the season is not too dry. We have also a pasture of about 50 acres.

Buildings.—The school buildings consist of a large house, 102 x 26 feet, with an addition on the north side used as a kitchen, 19 x 16 feet, and a pantry, 17 x 14 feet.

The centre building is 30 x 30 feet, 2 storeys high. The attic is unfinished, and consequently unoccupied. In the first storey is situated the refectory for the staff, the sewing-room, the parlour and a corridor leading from the front door to the kitchen; on the second storey are the rooms for the staff and a chapel of a suitable size.

On the west side on the first floor are the class-room, and the recreation-room for the boys; on the second floor, the dormitory for the boys, 34 x 26 feet.

On the east side, we have on the first floor, the refectory for the pupils, and the recreation-room for the girls. We have a small outbuilding, 18 x 17 feet, used as a chicken-house, and close to the kitchen is the laundry, 30 x 20 feet, the first storey of which contains the wash-room, 20 x 30 feet, and the coal-room, 20 x 20 feet. In the upper storey is the drying-room. We have also a stable, 28 x 30 feet.

Accommodation.—The building affords accommodation for 40 pupils and staff.

Attendance.—The pupils of this institution are all boarders, therefore the attendance is regular. During the last fiscal year we had 38 pupils on the roll; we lost 4, viz.: No. 08 got married; No. 012 died of consumption; No. 018 was transferred to Dunbow school, and one boy, No. 3, was discharged on account of his sight failing. We have now 34 enrolled, but the grant is allowed for 30 only.

Class-room Work.—We follow the programme of the department. The progress of the pupils is a little slow, but generally fair and encouraging.

Farm and Garden.—We have not a regular farm; but we have a garden, in which at special hours the pupils work.

Industries Taught.—Our children have special hours each day for manual work. The boys work in the garden, keep clean their rooms and dormitory, scrub the floors, help in the laundry and do the chores.

The girls are kept busy at general housekeeping, helping in the kitchen, knitting, sewing, mending and washing clothes. The older girls cut and mend their own dresses.

Moral and Religious Training.—Special attention is given to the instruction of the pupils in moral and religious truths. Prayers, catechism and Bible history are taught by the principal, half an hour each day.

Health and Sanitation.—The health of the pupils has been generally good, except one death by consumption (No. 012) and one, No. 3, having an incurable eye disease, was discharged. There are still a few cases of scrofula. The health is improving now.

Water Supply.—We have a good well within a few feet of the kitchen, with sufficient water for the needs of the school.

Fire Protection.—We have 5 fire-axes and buckets full of water at convenient places. There are also several fire-extinguishers, distributed throughout the building.

Heating and Lighting.—We use common coal stoves for heating purposes. Coal oil lamps are used for lighting.

Proper care is taken against danger by fire. Matches are removed out of the reach of the pupils.

Recreation.—We have 2 recreation-rooms, large and well ventilated; the larger for the boys, the other for the girls. There is a fence around the school buildings, inclosing 2 play-yards for the pupils. Besides, there is sourrounding the buildings, a good piece of prairie, where the pupils play during good weather under the supervision of some of the staff. The boys take special delight in playing football or some other game.

I have, &c.,

L. DOUCET, O.M.I.,
Principal.

PROVINCE OF ALBERTA,
SARCEE BOARDING SCHOOL,
CALGARY, May 19, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt.-General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit a report of the Sarcee boarding school for the year ended March 31, 1908.

Location.—The school is situated on the southeast corner of the reserve and near the agency buildings.

Land.—About 10 acres are fenced for school and mission purposes.

Buildings.—The school consists of 2 wings, one for boys and the other for girls. These are connected with each other by the dining-room and kitchen.

Accommodation.—There is accommodation for 20 boys and 10 girls, and for a staff of 3 persons.

Attendance.—Twelve pupils were on the roll during the year.

Class-room Work.—This was interrupted during the last 3 months of the year, owing to an outbreak of chicken-pox. The children are all fairly advanced, however. There are two in standard V, 2 in standard IV, 2 in standard II, and 5 in standard I.

Moral and Religious Training.—I cannot speak too highly of the care which my staff take to see that this important branch of education is developed in all the pupils.

Farm and Garden.—About 1½ acres are planted with garden stuff each year, and a plentiful supply of vegetables is obtained. No attempt has been made at farming, as the pupils hitherto have generally been drafted to the industrial school when 14 years of age.

Health and Sanitation.—This has been good, except for the outbreak of chicken-pox before Christmas, when four of the girls took the complaint, one after the other, and we were still in quarantine at the end of the fiscal year. The interior of the building has been painted and kalsomined by the staff and pupils since then. There have been no deaths in the school for some years past.

Water Supply.—This is obtained from a well of spring-water pumped into the building by means of pipes.

Fire Protection.—Barrels, buckets and dry dust fire-extinguishers are kept on hand in convenient places.

Heating and Lighting.—This is provided by means of stoves and oil lamps.

General Remarks.—The staff, 3 in number, continues the same, and are doing excellent work. Some of the ex-pupils of the school are doing well on the reserve and are an encouragement to us to continue in the work of Indian education.

I have, &c.,

J. W. TIMS,
Principal.

PROVINCE OF ALBERTA,
ST. ALBERT BOARDING SCHOOL,
ST. ALBERT, April, 1, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

Location.—The St. Albert boarding school is not on a reserve. It is beautifully situated at a distance of a quarter of a mile north of the Canadian Northern railway station, on an eminence overlooking the town of St. Albert, and the Sturgeon River valley.

Land.—Some 335 acres of land are attached to the school. The soil is of excellent quality, and from 200 acres, large crops, consisting of hay, vegetables and cereals are produced. The remaining 135 acres are in pasture or woodland. The farm is the property of the Sisters of Charity. It lies in township 54, range 25.

Buildings.—The school is a four-storey frame structure, with brick foundation. In the main building, which is 180 x 35 feet, are situated 4 well equipped well ventilated and commodious class-rooms; also apartments for the girls, and members of the staff. The other section, 50 x 30 feet, is the boys' quarters. This part of the building is in a very dilapidated condition, and quite beyond repair. We have consequently decided to erect a new building, 80 x 50 feet, for our boys. The plans are being prepared, and a large quantity of the material required is already on the ground. The outbuildings consist of: bakery, laundry, barn, stables, hennery, implement-shed, repair shops and storehouses.

Accommodation.—The present buildings have accommodation for 200 persons.

Attendance.—There has been an average attendance of 70 Indian pupils during the year.

Class-room Work.—The progress in the school-room, throughout the year, has been very satisfactory. The public school programme of studies for the province is followed as circumstances will admit of. Most of the pupils have musical talents. The boys have a disciplined and well trained brass band. Fourteen of the girls have been learning the mandolin since May, 1907, and can master the instrument quite well now. Musical entertainments are frequently given by these pupils, and their proficiency noted.

Farm and Garden.—Last year the yield of grain was as follows: wheat 900 bushels; oats, 750 bushels; barley, 2,000 bushels; all of which was greatly damaged by frost and only fit for fodder; potatoes, 1,200 bushels; vegetables, 225 bushels; hay, 294 tons.

Industries Taught.—Boys and girls have fixed hours for work, during which time, they are trained in various trades by competent teachers. The boys are thoroughly instructed in the different branches of farming and gardening, dairy work, the care of live stock, shoemaking, repairing implements and rough carpentry. The girls are instructed in the culinary department, dairy, laundry, dressmaking, carding, spinning, knitting, machine-sewing, fancy and plain needle-work and general housework, in which many of them excel, as is noted when they leave school and have homes of their own to look after.

Moral and Religious Training.—The pupils are thoroughly instructed in the principles of faith and religion. They are vigilantly trained to self-respect, truthfulness, and all Christian virtues. It is a pleasure to certify that good results are obtained. Punishments are of very rare occurrence.

Health and Sanitation.—The general health of the pupils has been good, scrofula is the main ailment we have to contend with. The sanitary condition of the school is excellent.

Water Supply.—Two wells furnish the institution with an abundant supply of excellent water, which is pumped into tanks by a hot-air engine.

Fire Protection.—Water, being distributed throughout the building, affords a good protection. There is easy access from every department to outside galleries and stairs; and 500 feet of hose, 5 chemical fire-extinguishers, 6 grenades, 3 fire-axes, and several ladders placed about the building, are all kept in readiness in case of emergency.

Heating and Lighting.—We have three hot-air furnaces and several ordinary stoves in which coal and wood are used as fuel. Light is satisfactorily supplied to the entire building by Siche gas.

Recreation.—Each day, 2 hours are set aside for recreation; when weather permits, the boys play baseball and football or other open-air healthful games.

The girls amuse themselves at croquet, basket-ball, skipping, physical drills, &c.

I have, &c.,

SISTER M. A. CARROLL,
Principal.

PROVINCE OF ALBERTA,
VERMILION (ST. HENRY'S) BOARDING SCHOOL,
VERMILION, June 22, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs.
Ottawa.

SIR,—I have the honour to submit the annual report of the Vermilion Roman Catholic boarding school for the fiscal year ended March 31, 1908.

Location.—This school is situated on a very picturesque bend of the Peace river, facing the Caribou mountain on the north side, and the Buffalo mountain towards the south. Here ends also the last spur of the Rockies, 600 miles below the main range.

Land.—The area of land, connected with our establishment and owned by the Oblate Fathers, is about 1,000 acres; 400 acres have been fenced and 100 acres are in pasture.

Buildings.—The present buildings appropriated for the pupils and their teachers, have been put up temporarily, but a good frame building, 80 x 35 feet, on a stone foundation, has been started.

Attendance.—The attendance has not been as satisfactory as we could have wished, owing to some temporary sickness, which has occasioned a certain reluctance on the part of the parents to part with their children.

Class-room Work.—The subjects taught are: reading, spelling, writing, grammar, geography, arithmetic, composition, gymnastics and vocal music.

Farm and Garden.—There are over 60 acres of land under cultivation at present.

Moral and Religious Training.—The moral and religious training is based on the pure and unsullied doctrine of the Holy Scripture.

Health and Sanitation.—Every possible precaution is taken to ensure perfect sanitary conditions and we had to deplore no death during the year.

Water Supply.—The river, which flows near the mission, furnishes an abundant supply of water.

Fire Protection.—We have only the water from the Peace river, and ladders as protection against fire.

Heating and Lighting.—Wood is used for heating and coal oil for lighting.

Recreation.—Recreation is taken after meals in the open air, during which the children enjoy outdoor games. In cold weather a long walk is taken almost every day.

I have, &c.,
C. JOUSSARD, O.M.I.,
Principal.

PROVINCE OF ALBERTA,
WABISKAW (ST. MARTIN'S) BOARDING SCHOOL,
LAKE WABISKAW, June 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs.
Ottawa.

SIR,—I have the honour to forward the annual report of the Wabiskaw (St. Martin's) Roman Catholic boarding school for the year ended March 31, 1908.

Location.—The St. Martin's mission is situated on a stony point on the northern shore of Lake Wabiskaw. A splendid view of the scenery surrounding can be had from the buildings.

Land.—The area of land in connection with the school consists of about 22 acres. Of this portion, about 5 acres are under cultivation. The remainder affords good pasturage.

Buildings.—There are 4 buildings, the two largest of which stand in a horizontal line, and the church is just in the centre, but advanced toward the lake, so as to form an oblique line to the 2 houses. These buildings are of hewn logs, 2 of them being 42 x 32 feet, three storeys high. One is devoted to school purposes.

A wing on the east side is 24 feet long by 20 feet wide. On the first floor is the school-room, on the second, the boys' dormitory. Two outbuildings were erected last year; one for a dairy and a safe storage for meats and other articles of food; the other is used for a carpenter-shop. There are also 2 stables and a hen-house.

Accommodation.—There is room for about 50 pupils and a staff of 7 or 8 members. The girls have apartments in the main building on the west side. Their rooms comprise a recreation hall, a dormitory, refectory and a sewing-room. The other apartments are occupied by the members of the staff.

Attendance.—There were 36 pupils on an average in attendance during the year.

School-room Work.—The pupils have 6 hours of school daily. Their progress is generally good and encouraging.

Industries Taught.—The girls are taught sewing, knitting, washing, ironing and all that can contribute towards making them good housekeepers. The boys prepare the fuel and aid in the care of the stock and gardens.

Moral and Religious Training.—The moral and religious training is based on the pure and unsullied doctrine of the Holy Scriptures. The Rev. Father in charge instructs the children with great care and zeal, and we do our utmost towards making them understand and practise what they are taught.

Health and Sanitation.—The children have all enjoyed very good health during the year. We attribute this in a great measure to good ventilation and frequent outdoor exercise.

Water Supply and Fire Protection.—A large supply of water is always kept on hand in case of fire. We are also provided with ladders and buckets. Other improvements will soon be made.

Heating and Lighting.—All the houses are heated by stoves. Wood is the only fuel used.

Coal oil is used for lighting, and proper care is taken against danger by fire.

Recreation.—Outdoor exercise and games are given as often as the weather will permit. The boys have great sport in playing football, while the girls amuse themselves skipping, swinging, playing games and rolling hoops.

The government grants yearly $72 per capita for 25 pupils.

Trusting that this report will meet with your approval,

I have, &c.,

SISTER MARY FLORE,

Principal.

PROVINCE OF ALBERTA,
RED DEER INDUSTRIAL INSTITUTE,
RED DEER, April 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my report for the fiscal year ended March 31, 1908.

Location.—The school is situated on the north bank of the Red Deer river, about 3 miles in a direct line from Red Deer town, but on account of the winding of the river, the actual distance is about 4½ miles. We have a beautiful location and a very fine view of the surrounding country, a rolling prairie varied by river, creek and bush. The school is not situated on a reserve; the nearest being about 40 miles to the north.

Land.—There are three quarter sections of land where the buildings are situated, being part of section 14, township 38, range 28, west of the fourth meridian; also some 14 acres of section 11, which lies between the original school property and a deep gully to the southwest, was later added by gift of the government. In addition, we have half, each, of sections 16 and 20, hay-land. The whole acreage thus under control of the school amounts to 1,140 acres and is the property of the Department of Indian Affairs. The three quarter sections of 14, consist of the best black loam soil and are admirably adapted for mixed farming and gardening.

Buildings.—The main building is of grey stone, quarried from the river bank immediately below. It contains the dormitories for the girls, as well as all the boys under 10 years of age, private room for lady members of the staff, staff dining-room and sitting-room, general dining-room, kitchen, laundry, store-rooms, sewing-room and principal's office.

A three-storey brick building accommodates the bigger boys. The ground floor of this building has been remodelled during the year; a very comfortable sitting-room has been made and suitably furnished; a reading-room has also been arranged. The lavatory has been newly furnished, and by running a partition across the large room, a store-room has been made. The second storey is the dormitory and the third storey forms the school-room, which is also used for chapel purposes.

In addition to these larger buildings there is a neat and commodious residence for the principal, 3 cottages for married members of the staff, a blacksmith and carpenter's-shop, ice-house and refrigerator combined, pig-house, horse-stable, cow-stable, hen-house, dairy, engine-house, implement-shed, well-house, granary, private stable and 3 closets.

Accommodation.—There is accommodation for 80 pupils and a staff of 10.

Attendance.—The year began with 70 names on the roll and 57 in actual attendance. The record of the year is as follows :—

Number on the roll		70
Admitted during the year		4
Total		74
Discharged	9	
Dropped	5	
Expelled	1	
		15
Total number on roll		59
Total number in attendance		50

Class-room Work.—The half-time system is carefully followed and the children are making excellent progress under the efforts of our untiring and painstaking teacher, Mr. W. B. Shaw, who holds a first-class professional New Brunswick certificate. A great change has taken place in the class-room during the past 6 months; up to that time it required constant effort and frequent urging on the part of the teacher to get the children to study at all, and now the children are taking the initiative, and positive competition is the spirit prevalent in the school. Some of the more advanced pupils have asked permission to study extra lessons out of school-room hours and under the teacher's guidance good progress is being made in what they please to call their 'home work.'

At the close of the year the grading of the pupils is as follows:—

Standard I	12
" II	10
" III	16
" IV	8
" V	4
Total	50

Farm and Garden.—Last season we had about 240 acres of land under cultivation, as follows: spring wheat, 8 acres; oats, 99 acres; barley, 70 acres; green feed, 5 acres; potatoes, 10 acres; timothy, 2 acres; garden, 2 acres, and summer-fallow, 44 acres. The garden crop was good, but we shared the general fate of Alberta farmers in regard to the grain crop, much of that which was cut being unfit to thresh. To meet this condition we purchased and fed for spring shipment a bunch of 20 steers, which proved a very profitable investment, as well as giving an object lesson to the boys.

Industries Taught.—Mr. T. A. McMahon, who is in charge of the farm, has taken a great interest in teaching the boys practical farming and cattle-raising. Some lectures upon weeds, summer-fallowing, &c., have been delivered by him and examinations are being held; this is to supplement the daily instruction on the farm. The boys are encouraged to raise small gardens on their own account. Mr. T. H. Lockhart and Mr. C. McBride have charge of the boys in connection with painting, paperhanging, carpentering, &c., and much valuable experience has been gained by the pupils in these departments.

The girls are taught general housework and dairying. The following ladies are in charge of the various departments in the girls' building and very faithful work has been done by each and all:—Miss Cummings, matron; Miss F. Oldford, kitchen; Miss A. Culham, laundry; and Miss S. Slack, sewing-room.

A marked revival of interest has been manifest on the part of all the pupils in every department during the past six months.

Moral and Religious Training.—This department of effort has yielded a large harvest during the year. The regular services have been conducted morning and

evening, each Sabbath, with a well-organized and up-to-date Sabbath school in the afternoon weekly. In addition to these services and daily prayers, voluntary classes once per week, have been held for the girls and boys, on separate evenings. The attendance, even on fine evenings when the outdoor games are so enticing, has been large. A mission band has been organized and nearly all the pupils are contributing of their small earnings toward the erection of the new hospital in Chentu, China. It has been no uncommon thing for the writer to be interrupted in his office work by girls and boys wishing to know more perfectly the way into the Christian life, and needless to say he has never been too busy to respond, with the very gratifying result that in each case the decision for Christ was made. More than half of our pupils are now numbered as definite followers of Him.

Health and Sanitation.—Throughout the year the general health of the pupils has been excellent. During the winter we have had a few cases of scrofula, a brief attack of measles and one case of pneumonia. We are working at the sanitation problem and hope to have it in a much better state before long. We have received excellent service from the medical officer, and his efforts have been attended with great success. There were no deaths during the year.

Water Supply.—An abundent supply of pure spring-water is pumped through the two main buildings by steam pump and stored in tanks. Also a second well is in working order, with hand pump and in close proximity to the buildings.

Fire Protection.—There is no fire-protection, excepting the water tanks and a few pails.

Heating and Lighting.—Two Smead-Dowd and two Pease furnaces have kept the main buildings and the principal's house very comfortable during the past winter. These furnaces were thoroughly examined and repaired last fall. The cottages are heated with wood stoves. Coal-oil is used for lighting throughout.

Recreation.—The girls take outdoor exercise by swinging, skipping, hand-ball, walking, football, coasting and skating.

The boys are forming a baseball club; they also play football, quoits and putting the stone. They hunt, fish, swim, skate and coast in season.

Libraries have been opened for girls and boys respectively, and have been very highly appreciated by the pupils, which is manifest by the fact that several of the children have read from six to twelve good-sized story-books each, during the winter.

One evening per week has been set aside for the gathering together of girls and boys in a social way.

General Remarks.—All the departments in this institute are doing good work. The pupils are happy and cheerful; they are also taking much initiative interest in all their work. We are teaching them habits of personal cleanliness and seeking to give them ideas of life and a high ideal for life, indeed we are endeavouring to incorporate in the management of the institute this spirit:—

'We must be here to work,
'And men who work can only work for men;
'And not to work in vain, must comprehend
'Humanity, and so work humanely,
'And raise men's bodies still by raising souls.'

In conclusion, I wish to express my high appreciation of the faithful services and unselfish efforts of all the members of the staff and to thank the officials of the Missionary Society and of the Indian Department for their uniform courtesy.

I have, &c.,

ARTHUR BARNER,
Principal.

PROVINCE OF ALBERTA,
ST. JOSEPH'S INDUSTRIAL SCHOOL,
DAVISBURG, April 30, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location.—The school is situated in a valley on the right bank of High river, about 4 miles from Davisburg post office, and 11 miles from De Winton, our nearest railroad station. It is not on a reserve.

Land.—Fifteen hundred and fifty acres are used in connection with the school. In the vicinity of the school there are 1,063 acres, as follows: the east half of section 22, township 21, range 28; half of the southwest quarter of 26, 21, 28; 30 acres of 15, 21, 28, and 633 acres of 27, 21, 28, west of the 4th meridian. The east half of section 26, township 20, range 27, and the northeast quarter of 36, 20, 27, west of the 4th meridian, are held as a hay reserve and are located just 12 miles southeast.

All of the above land belongs to the government.

The home farm comprises good bottom and bench-lands, most of which is well adapted for agricultural purposes. Our hay-lands are situated in a low-lying district, where there is an abundance of prairie hay and pasture.

Buildings.—Two main buildings, one for the boys and the other for the girls, contain the dormitories, lavatories, class-rooms, offices, a kitchen, a dining-room, a chapel and rooms for the members of the staff.

The workshops, lumber-shed and bakery are west of the boys' building, and in line with it. Two hundred yards in the rear of the main buildings are the stables, granary, implement and wagon sheds. Behind these are the piggery, calf-shed, cattle-corral and slaughter-house. The hospital, engine-house and laundry are situated near the river, east of the girls' school. The establishment is very prettily situated and has the appearance of a compact little village.

No new buildings were erected during the year. Alterations were made in the girls' class-room, the dining-room was enlarged and an addition was made to the crusher-shed. The floors and stalls in the stables were repaired, the smoke-house was moved and placed on a solid foundation. Numerous other repairs were made to buildings, furniture, fences and sidewalks.

Accommodation.—There is accommodation for 125 pupils and the necessary staff.

Attendance.—The average attendance for the year was 69. Admissions, 10; discharges, 8.

Class-room Work.—Half of each work day is devoted to class-room work by the older pupils, and half is spent in gaining a practical knowledge of some industry. Regular school hours are observed, namely, from 9 a.m. to 12 o'clock, and from 1.30 to 4 p.m., with the usual intermissions. Junior pupils attend both morning and afternoon sessions. The authorized programme of studies is adhered to, and I may say that the progress of the pupils is satisfactory.

At the end of the year the pupils were graded as follows:—

Standard I.	7	pupils.
" II.	9	"
" III.	6	"
" IV.	28	"
" V.	12	"
" VI.	6	"

Farm and Garden.—We have about 200 acres under cultivation. Most of this will be sown in oats, barley and wheat. About 15 acres will be reserved for the root crop.

Last year's harvest, considering conditions elsewhere, was a fairly bountiful one. We had over 6,000 bushels of grain, and about 1,700 bushels of roots; 900 tons of hay were put up.

Stock.—There are 195 head of cattle, 47 horses, 45 hogs and about 100 poultry. Live stock and farm produce sold, amounted to about $5,000.

Industries Taught.—*Farming.*—We regard farming as the most important industry, and particular care is given to the management of stock. Throughout the year, the senior boys work at least half a day on the farm, and during seeding, haying and harvesting the whole day is devoted to work. The smaller boys assist in the work of the farm, helping to cultivate the root crop, doing the chores and other light work. All the big boys learn how to milk. Provisions, hay, lumber and other supplies are hauled to the school by teams in charge of the boys. These boys drive the teams in ploughing, mowing and seeding, gaining thereby a useful knowledge of farming.

Carpentry.—In charge of the carpenter instructor the boys in this department did all the necessary repairs and alterations to buildings and furniture.

Shoemaking.—No regular instructor is engaged. Handy boys, capable of making repairs to shoes and harness, are employed in the shop from time to time.

Needlework.—Directed by the reverend sisters, the girls are taught sewing, knitting, reparing clothes and darning, and they also receive thorough instrucion in cooking and general housework.

Moral and Religious Training.—The pupils receive daily instruction in the doctrines of Christianity, and they are led to apply its teachings in their every day lives. Morning and evening prayers are said in common and all attend church on Sundays and holy days.

The conduct of the pupils has been satisfactory. Discipline was maintained without employing severe measures.

Health and Sanitation.—The health of the children has been good. No deaths occurred among the pupils and only one case of serious illness.

The school is in a good sanitary condition.

Water Supply.—An abundant supply of good water is pumped by the engine from a well near the river into the tanks at the top of the main buildings.

Fire Protection.—Two large tanks in the boys' building and one in the girls' school are kept filled with water, which is available in case of emergency. Each of these tanks holds about 1,400 gallons. Pipe and hose on each storey are connected with these tanks. We have 18 fire-extinguishers, 48 hand-grenades, 40 fire-pails and eight fire-axes. These are distributed in convenient places in the different rooms of the buildings. Each of the dormitories is furnished with a fire-escape.

Heating and Lighting.—The 2 main buildings are heated by steam. Acetylene gas furnishes the institution with splendid light.

Recreation.—Healthful outdoor sports are encouraged. Football and hockey are the boys' favourite games. They are especially fond of hockey, and this year again won several games played with outside clubs. All the children like bathing, and many of them are good swimmers. The girls enjoy themselves at swinging, skipping, taking walks in summer; they skate and play hockey in winter.

I have, &c.,

J. RIOU,

Principal.

PROVINCE OF ALBERTA,
ALBERTA INSPECTORATE,
GLEICHEN, April 18, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the following report on such of the schools within this inspectorate as I was able to visit during the fiscal year ended March 31, last.

BLUE QUILL'S BOARDING SCHOOL (ROMAN CATHOLIC).

This school is situated on the Saddle Lake reserve and is under the auspices of the Roman Catholic Church.

This institution was inspected on August 29 last, and there were then 41 pupils in attendance: 26 boys and 15 girls, classified as follows:—

Standard	I	10 pupils.
"	II	8 "
"	III	9 "
"	IV	6 "
"	V	4 "
"	VI	4 "
	Total	41

The Rev. Sister Mayrand had charge of the senior divisions and the Rev. Sister Laverty the junior divisions. Sister Mayrand holds a first-class certificate to teach within Ontario or wherever the Ontario certificates are acknowledged. Although Sister Laverty holds no certificate to teach, she has had a good deal of experience and has the faculty of imparting knowledge to the pupils under her care.

The staff was as follows:—Rev. Father Balter, principal; Sister Leveille, directress; and seven other reverend sisters.

The pupils passed a very creditable examination in all subjects. They all read fairly audibly and well. All writing and drawing books were clean and the work neatly executed. The geography and grammar showed evidences of efficient and careful training. Many English-speaking Indians misuse the pronouns 'he,' 'she,' and 'it.' The advanced pupils at this school gave evidence of knowing when to use these words.

Seven pupils, all girls, had a short time before started to practise on mandolins. All the pupils sing—some have melodious voices and sing sweetly.

Splendid samples of knitting and sewing were on exhibition and the elder girls are taught, in addition, all manner of plain housekeeping. The elder boys are trained at gardening, caring for stock, and they help to do the general work about this institution. One of the best kept flower and vegetable gardens within this inspectorate was seen at this school.

The children had not received any training in accordance with late instructions in regard to what is known as 'fire drill.'

A new pump and a sweep-power were received a short time before my visit, but they were not placed in position for work. I am told, however, that it is now in use and that both the pump and the power are working satisfactorily.

Five pupils were discharged and eight pupils were admitted between the dates of this and last inspection. The pupils discharged were: 14, 13, 13, 18 and 14 years of age respectively.

MCDOUGALL ORPHANAGE BOARDING SCHOOL (METHODIST).

This school is located near the stony reserve and about 6 miles from a station of the same name, on the main line of the Canadian Pacific railway. It is under the auspices of the Methodist Church.

The inspection of this institution was made on November 14 last.

The staff then comprised: Mr. C. B. Oakley, principal; Mrs. Oakley, matron; Miss Ida Semple, cook; Miss Mattie Clipsham, seamstress; Miss Minnie Oldfield, laundress; Mr. H. G. Ansion, blacksmith, &c.

A Miss Brundridge held the position of teacher here for about 2 months, and then her health gave out entirely, and a few days before I visited this institution she gave up the work and I found the class-work under the charge of Miss Oldfield.

There were 39 pupils enrolled: 18 boys, and 21 girls, and classified as follows:—

Standard I.	20	pupils.
" II.	5	"
" III.	11	"
" IV.	3	"
Total	39	"

Although there were 39 enrolled, there had been only 26 regularly within the institution. Four of the absentees were in the hospital and the other 9 were with their parents in the mountains, or in their homes on the reserve. The Indians of the reserve adjacent to this school have not in my opinion exhibited a burning desire for their children to gain an education. This is evident from the fact that there are about 100 children of school age within easy reach of this institution, and the parents of these children neglect and refuse to grasp the means at hand to secure these children an education. The children read in a tone to be heard some distance away and there writing-books were evidence that a goodly number were fairly proficient at penmanship. The too frequent changing of teachers at this school has not tended to advance the pupils in any branch of the work.

The following improvements had been made during the summer of 1907; about 1½ miles of barbed wire and ¾ of a mile of wood stock fence had been erected about the stock grazing grounds; about 300 yards of barbed wire fencing constructed about the buildings, and a new wood fence had been partially erected in front of the main building. The laundry had been renovated and a stone foundation wall placed under three sides of it. The inside walls of this laundry had been wainscotted to 4 feet from the floor, and the remaining portion strapped and then lath and plastered. The outside walls had drop siding placed thereon and a new chimney also provided. Adjacent to this laundry there was a dairy and store-room partially completed at the time I visited this institution. The portion intended for use as a dairy is underground, and about 7 feet of the lower portion of this building is of stone, and on this stands a balloon frame, with a shingle-covered roof.

About 50 acres of land had been under crop, but the result had not been very satisfactory. About 55 loads of green feed, however, and 125 bushels of potatoes and a fine quality of excellent head of cabbage were secured.

SARCEE BOARDING SCHOOL (CHURCH OF ENGLAND).

This school is located near the southeastern corner of the Sarcee reserve, and about 10 miles from Calgary. It is under the auspices of the Church of England,

and when the inspection was made on July 12 last the staff comprised: the Venerable Archdeacon Tims, principal; Mr. Percy E. Stockton, assistant principal and teacher; Mrs. Stocken, matron; Miss Crawford, assistant matron.

Only 2 of this staff receive recompense for their work, namely, Mr. Stocken and Miss Crawford.

There were 5 boys and 7 girls enrolled and the classification was:—

Standard I	1
" II	5
" III	4
" IV	2
Total	12 pupils.

The visit to this school was made during the vacation term and on that particular day the 5 boys were absent, at the exhibition at Calgary, and I was unable, therefore, to hear the pupils at work in the class-room.

Between this and the previous inspection one new pupil had been enrolled and 3 had been transferred to the industrial school near Calgary.

About one acre of land was under roots and garden stuff. There were about 1,500 cabbages, and these and the other vegetables promised a good yield.

ERMINESKIN'S BOARDING SCHOOL (ROMAN CATHOLIC).

This school is on the Ermineskin's reserve and within a mile, westerly, from the Hobbema siding on the Calgary and Edmonton branch of the Canadian Pacific railway.

The inspection of this school was made on January 3, last, and there were then enrolled 23 boys and 30 girls. Fifty pupils, however, is the grant-earning limit.

The classification of the 53 children was, at the time of inspection, as follows:—

Standard I	10	pupils.
" II	6	"
" III	16	"
" V	20	"
" VI	1	"
Total	53	

Reasonable proficiency was displayed by the pupils in all branches of their class work. The pupils all speak audibly and fairly distinctly. Breathing exercises seemed to be about the only branch overlooked in this institution and the teacher assured me that this exercise would be taken up at once.

The children had been drilled to escape from the building in the event of a fire breaking out. An alarm was given when the pupils were all in the class-room, and five minutes from the moment the alarm was sounded all the children had passed up to the dormitories, had thrown out two escape tubes from dormitory windows and had passed out through these tubes to the playgrounds below.

The Rev. Sister St. Jean de la Croix is superioress of this institution and she is assisted by nine other sisters.

The Rev. Sister St. Ludgarde is head teacher and Sister St. Flam assistant teacher. Sister St. Ludgarde holds a second-class teacher's certificate; she is a very capable instructor and a good disciplinarian.

A new well, with a three-way pump, had a short time before my visit, been provided by the department. The well is over 200 feet deep, and there was an abundance of good water suitable in every respect for either household or laundry purposes.

About five acres of land was under crop last season and from this land about 950 bushels of potatoes, 15 bushels of turnips, 14 bushels of carrots and 250 heads of cabbage were taken.

Four pupils had been discharged and five admitted during the year 1907.

Eleven of the girls play the mandolin, and the boys play the set of brass instruments belonging to the school.

The entire building is heated by stoves and lighted by coal-oil lamps.

There is not a great deal of scope for the industrial training of the boys. They do the chores about the institution, and during the summer months they assist in the gardening, and in the winter months they care for the stock, about 14 head of cattle and horses. The girls are trained at general housework, knitting, darning, mending, plain and fancy needlework, &c.

This institution is under the auspices of the Roman Catholic Church, and it is operated under the per capita grant system, $72 per annum, for each of the 50 pupils.

The building throughout was tidily kept, and as clean as a new pin.

BLOOD BOARDING SCHOOL (ROMAN CATHOLIC).

This school is located on the Blood reserve and near a point known as Stand-off.

It was inspected on February 6, last, and the staff then consisted of the Rev. Father Salaun, principal; Sister St. Marjorique, matron, and 6 other sisters.

The teacher, Sister St. Patrick, does not hold a certificate of standing as a teacher.

There were 20 boys and 26 girls enrolled, and the classification was as follows:—

Standard	I.	11 pupils.
"	II.	13 "
"	III.	18 "
"	IV.	4 "
Total		46 "

The examination revealed less timidity and dullness than at the last inspection of this school. The pupils spoke in a tone sufficiently loud to be heard across the classroom, and the pronunciation of the words throughout the texts was reasonably accurate. An advancement in all the branches of the work was perceptible. The programme of studies had evidently been followed, excepting the healthful breathing exercises and calisthenics, and I was assured that these would not be neglected in the future. The fire-drill, too, had been neglected.

The girls had been taught sewing, mending, knitting, baking and general housework and the boys to care for stock and some gardening during the summer months.

The institution is heated by two hot-air furnaces and lighted by coal-oil lamps. Two new brick chimneys had a short time before my visit been erected, from the cellar floor to above the highest point of the roof. New treads in stair and a new floor in the boys' play-room had also been placed.

Since I last inspected this institution 15 new pupils have been admitted; 1 discharged and 2 transferred to the St. Joseph industrial school.

The building throughout was clean and tidy.

BLOOD (ST. PAUL'S) BOARDING SCHOOL (CHURCH OF ENGLAND).

This school is located on the Belly river, on the side opposite to where the Blood agency buildings stand. This institution is on land owned by the church, and the pupils are drawn entirely from the Blood band of Indians.

When I visited this school on February 10, there were 21 boys and 23 girls, classified as follows:—

Standard I.	13	pupils.
" II.	9	"
" III.	10	"
" IV	1	"
" VI.	9	"
Total	42	"

There were, in addition to those classified, 2 pupils under 5 years of age.

Triangles had been ordered, I was told, and as soon as they should be received the pupils would be disciplined as to how best to escape from the buildings in event of their yielding to a wind-storm, or catching fire.

The programme of studies, apparently, is closely followed at this institution, and the pupils displayed reasonable knowledge in all the subjects. A majority of the pupils in standard VI would make a creditable showing in any of the Indian schools.

About 2,700 young trees were received from the Forestry Department and planted on the lands of this institution. A new floor had been placed in the girls' home and some other improvements and renewals had been done since I visited this school in September, 1906. The old dilapidated building in use by the boys at the time of my previous inspection was still in use. All other buildings in connection with this institution are in fairly good condition, and buildings, yards, &c., were clean and tidy.

The staff comprised: Rev. G. E. Gale, principal; Mr. Aldous, assistant principal; Miss Wells, senior teacher (second-class certificate); Miss Stonning, junior teacher (first-class certificate); Miss Longworth, boys' matron; Miss Underwood, girls' matron; Miss Van Buskird, housekeeper.

There are 160 acres of land belonging to this school and of this about 36 acres were under crop last season. The elder boys are trained in farming, gardening, tree culture and care of stock, and the girls, of an age and strength, are drilled at dairying, housekeeping, knitting, sewing, dressmaking and such like avocations.

Between the last and the previous inspection, 17 months, there were 10 pupils admitted and 4 discharged from this school.

A cadet corps was formed last September and the boys are regularly drilled three times each week. Mr. Aldous is the instructor, and his corps are now capable of going through the manoeuvres very creditably.

CALGARY INDUSTRIAL SCHOOL (UNDENOMINATIONAL).

This school was closed at the end of the last calendar year. When I inspected it during September, 1906, there were only 18 pupils on the roll. During the last few months it was open there were only about 6 boys remaining at this institution and, as it had seemingly outlived its usefulness in the eyes of the Indians, it was closed on the date stated herein.

An inventory of all live stock and articles in use in connection with this school was recently made and forwarded to the Indian Commissioner at Winnipeg.

DAY SCHOOLS.

There are now three day schools in operation within this inspectorate and they are all within the Saddle Lake agency.

These schools are located as follows: one on the Saddle lake, one on the Goodfish Lake, and one on the Whitefish Lake reserve.

When I was inspecting the Saddle Lake agency these schools were not in operation. I visited those points during March last, and when at Saddle Lake agency, I took occasion to look over the returns and from these returns and in other ways I learned that the average attendance at the Saddle Lake school during the quarter ended December 31 last, was 2·9. There were eight pupils enrolled and there were 66 school days in this quarter. These eight pupils attended 163 days during the year. Mrs. (Rev.) J. A. Seller is the teacher, and not only holds a certificate, but is reputed to be an energetic and capable instructor in every way. In my opinon the Indians of the reserve on which this school is located, are anxious to have their children educated, but to gain a livelihood, they find it necessary to make their homes at too great a distance from the school for the children to attend with that degree of regularity which is essential to the gaining of knowledge, even by white children, and it goes without saying that children cannot acquire an education in a tongue foreign to their own, if only under tuition a few hours during a couple of days each week.

The day schools at both Goodfish and Whitefish Lakes, are better situated than most day schools are, with regard to securing an attendance of the children. The homes of the Indians are generally speaking near the shore of these lakes. They are so located as to be near the fishing grounds and water, and in consequence, the children are within a reasonable distance from these schools. The returns for the Whitefish school for the quarter ended December 31 last, show that there were 21 children enrolled, that these children were present an aggregate number of 689 school days and absent 706 days. At the Goodfish school there were 12 children enrolled and they attended in the aggregate, 570 days, and were absent 222 days. The average attendance during the quarter referred to at these two school was computed to be: Whitefish, 10·3, and at Goodfish, 8·06.

Day schools were maintained within the Hobbema agency at two points, namely: on the Samson's and Louis Bull's reserves. Both of these schools were closed last year for the want of the regular attendance of the few children who did attend now and again. At these points the conditions are very similar to the conditions at Saddle Lake. Few Indians live at a reasonable distance from the locations of these two schools, and if they did, the question would be as to how they could gain a livelihood. Moreover, the meadow-lands are scattered here and there over the reserve, and when Indians are engaged at haymaking they make a point near to the meadow their home for the period they are so engaged and, of course, their children are with their parents, at or near, the hay meadows. Again, these Indians have a fishing station on Pigeon lake, about one day's drive from their homes, on their reserves, and during the winter months and at various other periods they go to this lake to fish, and as has been the custom of Indians for generations past they take their entire family along on these fishing excursions. For these and other reasons it is not an easy task to solve the question of securing a regular attendance at a day school on an Indian reserve. It can be done by getting the Indians to locate in villages, supplying practically all their wants of food and clothing and then compelling them to send their children to a day school.

All the day schools referrrd to are, or were, under the auspices of the Methodist Church.

GENERAL REMARKS.

For want of time I did not inspect the industrial schools at Dunbow (St. Joseph's, R C.) and the Methodist school near Red Deer. The following boarding schools were not visited for a like reason : Victoria Home and the Sacred Heart, Peigan reserve; Crowfoot and Old Sun's, Blackfoot reserve; and the Roman Catholic school at St. Albert.

I have, &c.,
J. A. MARKLE,
Inspector of Indian Agencies, &c.

MACKENZIE RIVER TERRITORY,
HAY RIVER (ST. PETER'S) MISSION BOARDING SCHOOL,
HAY RIVER P.O., VIA EDMONTON, ALBERTA, November 1, 1907

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to report that the above-named boarding school in connection with the Church of England in Canada, of which I am in charge, is located at the mouth of the Hay river, on its east bank, on the southwest shore of Great Slave lake, within the limits of Indian Treaty No. 8. It is not on a reserve, but in the unorganized territory of Mackenzie River, under the supervision of the Royal Northwest Mounted Police.

Land.—We have under cultivation a little more than 8 acres of Crown lands adjoining the Indian village of Hay River. The soil in the immediate vicinity is flat, alluvial deposit, on a bed of sand, and is adapted for agriculture. A varied growth of timber extends all round us. The land has simply been acquired through settler's possession, and is the property of the mission.

Buildings.—We have the following buildings:—

1. A large dwelling-house used as our boarding school, composed of 3 parts, successively erected, the last being two and a-half storeys high. The whole is constructed of logs and boards and contains 18 rooms.

2. A new dwelling-house, still only partially finished. Its size is 25 x 23 feet, two and a half storeys, with a 2-storey leanto attached, 25 x 15 feet. It will, when complete, contain 12 rooms. We are at present using the whole of this building, the main part of which is still unfinished, as store-rooms, and the leanto as a dwelling for part of our staff.

3. A workshop fitted up for carpentering and blacksmithing repairs.

4. A small storehouse in which is kept clothing, provisions and general supplies.

5. A wood-shed.

6. A small fish-house.

7. A byre for our cattle.

8 and 9. Small dwelling-houses, 14 x 16 feet, and occupied by members of the staff.

10. Our church building. It is roofed and shingled now, but must remain in its present unfinished condition until such time as we can get sufficient help to finish it. The church, the school and large dwelling-house are all roofed with metallic shingles. One of the small dwelling-houses, viz., No. 8, is new this year.

Accommodation.—Our institution is a mission home and school, the age of the pupils ranging form three to eighteen years, though we occasionally receive widows and others as mission helpers under instruction. We have room for about 60 persons and have had as many as 45 during the past year.

Attendance.—The attendance of pupils during the year ended June 30, 1907, was: girls, 18, and boys, 14, making a total of 32 regulation boarding pupils, besides one native helper (female) under instruction in general industrial work. In addition to these we had 3 day scholars, who are very irregular in their attendance.

Class-room Work.—The subjects taught in our institute include reading, writing, arithmetic, composition, grammar, geography, dictation, literature, history and holy scripture in English and native, both in the syllabics and in the Roman characters. The pupils make good progress in their English studies, though of necessity very slow at first, as frequently they come to us not knowing any English.

Class Hours.—Those are from 9 to 12 a.m., and from 1.30 to 3.30 p.m., and in winter from 9.30 to 12 a.m., and 1.30 to 3.30 p.m., as our daylight is very short and the children require to be out in the air if they are to maintain their health.

Farm and Garden.—We planted all of our available ground with potatoes, and although the season is short we reaped a fair return, 600 bushels. The garden is simply a small piece of land fenced off separately, in which we grow cabbages, cauliflowers, beets, carrots, parsnips, onions, radishes, lettuce, peas, beans and turnips. These are chiefly used for the benefit of the staff and mission helpers. Much of the planting, weeding, hoeing and harvesting of these vegetables is done by the school children under instruction. Our hay-supply is found in the grass which grows along the river banks and sloughs nearby. There is a large amount of goose-grass mixed with it and this we find very hard on the cattle, and have lost some through it. We have 2 milk cows, 1 bull, 1 heifer and 1 calf. We train our cows to work and use them with the bull for hauling purposes, thereby saving the extra keep for oxen, which is a very big item, considering the trouble and time required to get the hay, all of which must be cut by hand and sometimes under very great difficulty.

We have to keep on hand 3 teams (of 4 dogs each) for winter work, such as fishing under the ice, meat and fish-hauling, and general tripping connected with the mission. The support of these dogs necessitates a great deal of work, for they must be kept the year round, though they work only in the winter. The hog venture is now a thing of past history, as they have all died through various causes. The fowls mentioned in last report as doing so well, came to a sudden end when one day last winter the hen-house was seen to be in flames and was consumed with its contents.

Industries Taught.—We have no stated industries, but we aim to teach the boys the outdoor work and occasionally we are able to give them lessons in carpentering, iron repairing, and in building. The girls are taught to be thorough and clean housekeepers, and also to sew, mend and knit. In short, we aim to make each child a clean, thorough, industrious and practically useful person.

Moral and Religious Training.—We endeavour to teach our pupils to be obedient, diligent, straightforward and honest; and try to develop in them the essential principles of faith and trust in God and obedience to His will as revealed in the Old and New Testaments, all our training being subject to the inspection of the bishop of the diocese.

Health and Sanitation.—I am very happy to be able to state that during the time covered by this report we have lost but one child, and that, an infant brought to us to be nursed, which died two weeks after it arrived. There have been several deaths in the village during the same period.

We take all the sanitary precautions we can so as to check any spread of disease. We fill up our water-closets yearly and dig new pits. We throw all slop and refuse a safe distance from the house so as to keep the yard clean and free from infection.

Water Supply.—We obtain our water-supply from the river which flows close by the school, and is, generally speaking, always good.

Fire Protection.—We keep barrels of water constantly on hand and have ladders conveniently placed. A number of axes are always available, some are placed and kept for fire purposes only. Water buckets are constantly ready to hand. A system of fire-drill has been installed and will be regularly carried out.

Heating and Lighting.—We heat the main building, No. 1, with seven wood stoves and No. 2 with two wood stoves. Our fuel is drift-wood and spruce, which is plentiful here.

The institute is lighted with candles and coal-oil lamps, the latter for the use of the staff only.

Recreation.—We encourage free participation in all healthful outdoor games, such as football, baseball, boating, skating, hockey and sledding. The older boys are allowed to trap, set snares and hunt small game in the nearby bush. Indoor games

are provided and encouraged, such as checkers, bean bag and other like games. A good library of suitable books is provided.

Food Supply.—By far the greater portion of our food-supply is obtained from the lake and river by setting nets in them nearly all the year round. We are very seldom without fish on our table, these with potatoes are our chief articles of food. Occasionally we are able to secure a little meat from the natives if successful in their hunting. We also occasionally have to kill a small beef animal of our own production, the remainder of our food-supply consisting chiefly of flour, meal, tea, coffee, sugar, bacon, a little dried and canned fruit. These are imported from Winnipeg or Edmonton and cost us 8.50 freight for each 100 pounds. The cost of these provisions is met by the bishop and paid out of the diocesan funds.

Clothing.—The school children are clothed principally out of the mission bales contributed voluntarily by various branches of the Women's Auxiliary of the Church of England throughout the eastern part of Canada.

Mail Service.—The Hudson's Bay Company has a contract to carry two annual mails to and from our door. Another is landed eight miles east, viz., at Resolution. As the main service now stands, I am not able to send out this report to the government within five months of the time of receiving your circular letter unless I send it by some chance passer-by or else travel or send 80 miles to Resolution. I trust this will explain the lateness of my report.

General Remarks.—It may be of interest to the readers of this report to know that our pupils are representatives of the following tribes of the north: (1) Eskimo, (2) Tukudh, (3) Slavi, and (4) Chipewyan. Some come as much as 1,200 miles northwest of here; some from Fort Macpherson, 1,000 miles from here. Nearly all are from distant points, so we are obliged to provide for them the year round. While this has its advantages, it also deprives the staff of a much needed rest during vacation time in summer and winter. Day scholars are very unsatisfactory, as both child and parent resent every effort at discipline and retaliate by absence from school.

Viewed even from a commercial standpoint, we feel convinced that every cent expended by the government will be amply repaid in seeing the red man's children converted form their unclean and unsanitary life and becoming clean, honest, loyal citizens of our fair Dominion.

Our nearest neighbouring hamlet is 80 miles distant, and except for 4 or 5 chances in summer, through passing boats, there is no means of reaching it, but on foot, with the dog-train.

All our necessary provisions, clothing, and various requirements must be anticipated at least a year or eighteen months ahead. Our freight rates from the nearest railway point are $8.50 per cwt.

All our lumber is hand-sawn, all our furniture is hand-made.

The mission owns a small but very seaworthy steamboat, which enables us to visit our nets in safety when it would be otherwise quite impossible to do so.

Large game is very scarce in this neighbourhood.

Our nearest physician is 600 miles away. Our climate is quite severe in winter, the thermometer registers 40° F. below zero frequently for several days at a time. In 1906 it went as low as 62° below on the coldest morning. In midwinter we see the sun only for five hours during the day. In summer we have a fine climate, and but for the myriads of mosquitoes and bulldog flies should have a delightful season.

We are able to cultivate a limited variety of vegetables and garden flowers and by means of these we seek to keep green the memory of bygone years spent in the eastern portions of our fair land.

Finance.—In this connection I must explain we are only beginning to use the system of dollars and cents. The skin system has been and is still used as the mode of barter, but is now gradually being replaced by the system of currency. All native day-workers receive their pay in goods.

These goods are bought in Winnipeg and paid for by the bishop of the diocese and sent on to us to be used to pay our help. Some of the clothing and gifts sent in the bales made up by the Women's Auxiliary are used in this way also.

All mission freight charges and the travelling expenses of the children are settled by the bishop. All regular missionary workers are engaged and paid by the bishop from his headquarters, thus, it will be seen, I am quite unable to render any financial report whatever.

I have, &c.,

(REV.) A. J. VALE,
Principal.

NORTHWEST TERRITORIES,
FORT RESOLUTION (ST. JOSEPH'S) BOARDING SCHOOL,
FORT RESOLUTION, GREAT SLAVE LAKE, April 3, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to forward my first annual report of Fort Resolution (St. Joseph's) boarding school for the year ended March 31, 1908.

Location.—The school is built on the east shore of Great Slave lake. The view of the lake and surrounding country is beautiful.

Land.—The land connected with the school is about 4 acres and belongs to the mission.

Buildings.—The buildings comprise a dwelling-house, 2 warehouses, a barn, an ice-house and a closet. They are all large enough with the exception of the class-room and dormitories, but we hope our new school may be completed for next year.

Accommodation.—There is accommodation for 30 pupils, 18 girls and 12 boys.

Attendance.—The average attendance for the year was 29. The pupils are all boarders.

Class-room Work.—The progress of the children in their studies has been very satisfactory. We follow the public school programme for the Territories. English is spoken generally. The annual examination takes place the first week in January, when a prize for general proficiency is awarded in each standard, besides special prizes for good conduct, manual labour and needlework.

Farm and Garden.—We do not attempt to raise any cereals, but the growing of garden vegetables is very carefully and regularly taught, as well as flowers. The children take great interest in this kind of work.

Industries Taught.—Our children have special hours during the day for manual labour. The girls are taught washing, ironing, sewing, dressmaking, knitting and cooking. They help to make their own clothes, and do all their darning and mending. The boys help to saw and split the wood.

Moral and Religious Training.—Particular care is taken to inculcate in the minds of the pupils sound principles of morality. Every day one half hour is devoted to catechism and religious instruction.

Health and Sanitation.—This, on the whole, has been excellent for the past year. We did not have one case of sickness.

Water Supply.—The lake supplies excellent water for the wants of the school.

Fire Protection.—No special provision has yet been made in the way of fire-protection excepting an outside stairs descending from the girls' dormitory into the back yard.

Heating and Lighting.—Wood stoves and oil lamps are used.

Recreation.—During the play hours the favourite amusements of the boys are football and baseball. The girls in their own playgrounds amuse themselves at swinging, skipping and playing ball.

General Remarks.—I acknowledge with gratitude the considerable supply of school material received from the department. The pupils attend the parish church every Sunday, and the Indian children compose the choir. Every month the school is visited by the Bishop or one of the Rev. Fathers, and a small prize is given to the child having the highest number of notes for class work and for good conduct.

I have, &c.,

SISTER McQUILLAN,

Principal.

BRITISH COLUMBIA,
AHOUSAHT BOARDING SCHOOL,
AHOUSAHT, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of the Ahousaht boarding school for the fiscal year ended March 31, 1908.

Location.—The school is situated on a tract of land adjoining Maktosis reserve, on the inner side of Flores island. From the school there is an excellent view of North channel, Herbert arm and the Cat Face mountains.

Land.—The school property consists of 140 acres of land, chiefly covered with timber. A field of about 16 acres of loamy soil, ready for cultivation, has been recovered by draining a small fresh-water lake. The land is the property of the Presbyterian Church.

Buildings.—The building is a frame structure, 46 x 68 feet, with 2 storeys, basement and attic. During the year a bake-house, 20 x 12 feet, was added to the west side of the main building. There is also a wood-shed, 40 x 18 feet.

Accommodation.—The school building is commodious and convenient and can accommodate 60 pupils and a staff of 5.

Attendance.—The enrolment during the year has been 45. Of these one boy was discharged in November, having reached school age. One boy died in December of tubercular trouble, and one little girl died in March from tubercular trouble excited by an attack of measles. The attendance at the close of the year was 42: 24 boys and 18 girls.

Class-room Work.—The course of study prescribed by the department is followed. The pupils attend both forenoon and afternoon sessions of the school. Instruction is imparted by 2 qualified teachers. Good progress has been made during the year. Lessons in instrumental music have been given to 12 of the biggest scholars. They show aptitude for this study and have made excellent progress. The pupils are graded as follows:—

Standard	I.	5 pupils.
"	II.	8 "
"	III.	5 "
"	IV.	16 "
"	V.	11 "

Industries Taught.—In addition to the general work of the school, in which all the boys assist, the bigger boys are given instruction in carpentry, shoemaking, blacksmithing, plumbing, baking and gardening. The building of a new large tank and lining it with galvanized iron was done entirely by the work of the school. A tank-house and bake-house with oven was also put up without outside aid. The girls learn general housework. Instruction is also given to the older girls in cooking, making and repairing clothing, knitting and varieties of fancy-work.

Farm and Garden.—About 16 acres of suitable gardening soil has been recovered by draining a small lake. This was all seeded and planted during the summer, but only the part on which fertilizer was used gave satisfactory results. The action of sun and air for a time will be necessary to bring it to its best. Good hopes are entertained for the coming season. The apple-trees and small fruit bushes set out have done well.

Moral and Religious Training.—Very careful attention is given to the moral and religious training of the children. There is regular morning and evening daily worship. Two evenings of each week are devoted to religious study. One reading lesson daily is taken from the Bible for standard V, in school work, with very encouraging results. Children attend Sunday school and public worship on the Lord's day. Frequent personal work is also done with the children according to their need.

Health and Sanitation.—The health of the children has been fairly satisfactory during the year. An epidemic of measles in February taxed the strength of the children somewhat severely. One little girl, whose health had not been good for some time previously, died a couple of weeks after recovery from the measles. One boy died in December from tubercular trouble. The drainage of the school is good. Cleanliness and ventilation are well attended to. A suitable room is provided for isolation in cases of sickness.

Water Supply.—The water-supply is fairly well provided for. It is chiefly obtained from rainfall. During the year a large tank, 12 x 6 x 6 feet, lined with galvanized iron and placed in a tank-house, was constructed. By means of a double acting force-pump and hose the water is raised, when required, to the tanks on the upper flat of the school. The department gave a grant of $200 toward this outlay. A well was also deepened from which a supply of water suitable for many purposes can be obtained. The water-supply is now fairly well provided for.

Fire Protection.—The fire-protection consists of seven chemical fire-extinguishers distributed throughout the different floors and parts of the building. Filled buckets are kept in the dormitories, and eight fire-buckets are kept in reserve. Fire-escapes are placed at each end of the school building. By means of the force-pump and 100 feet of hose, water can be thrown on the roof or to any part of the building from the large tank. We have occasional fire-drill, using the triangle recommended by the department as an alarm to call the children from the dormitories. We have practice also to familiarize the boys in the use of the fire-extinguishers, buckets, pump and hose.

Heating and Lighting.—A large hot-air wood furnace in the basement inadequately heats the building. Coal-oil lamps are used for lighting.

Recreation.—Various outdoor games afford recreation in favourable weather; when unfavourable, suitable recreation is provided within.

General Remarks.—The wise counsel and conciliatory, but firm policy of Inspector Green, on his special visit in the early part of the year, has been most helpful in improving relations between the staff of the school and an unreasonable and disaffected small element on the reserve. The wise and prudent policy of the agent has been most successful in maintaining a high respect for law among the people of this isolated position.

I have, &c.,
(Rev.) J. L. MILLAR,
Principal.

British Columbia,
Alberni Boarding School,
Alberni, April 2, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit the annual report of this school for the year ended March 31, 1908.

Location.—This school has a beautiful location. It is built on a plateau about 60 feet above the level of the garden, which it overlooks; at the back of the school the country rises to a higher level, and is heavily timbered, giving abundant shelter from the prevailing winds. In front of the school, about 200 yards away, flows the beautiful Somas river, and from the school grounds we obtain a splendid view of the river, with Alberni 2½ miles distant. On the same plateau across the road which divides this property from the reserve, is the Shesaht village; and 1 mile down the river on the opposite side is the Opitchesaht village.

Land.—There is 156 acres in connection with this school, which is known as part lot 81, district of Alberni. The land is owned by the Presbyterian Church. The land is heavily timbered, is very expensive to clear; the soil, however, is very good. The soil is well adapted for all farming purposes, after the land has been cleared.

Buildings.—The buildings consist of main building, 38 x 43 feet, 3 storeys high, with wing, 32 x 46 feet, 2 storeys high. The old school building is used for laundry, bake-shop and carpenter-shop. Other buildings are class-room, wood-shed, driving-shed, root-house, stable and hen-house.

Accommodation.—There is accommodation for 60 children and a staff of 7.

Attendance.—There are 49 pupils on the roll, 20 boys and 29 girls. Nine pupils were admitted during the year, 3 boys and 6 girls. Seven pupils received their discharge, 5 boys and 2 girls; one boy took sick while absent on leave during the summer holidays, his sickness prevented him from returning to school, and he died from consumption in November.

Class-room Work.—Good progress has been made during the year. The programme of studies authorized by the department is followed. Miss Guillod continues to fill the position of teacher.

Farm and Garden.—The stock consists of 1 horse and 4 head of cattle. Several of the boys have learned to milk. The larger boys do the ploughing, harrowing and teaming for the school.

Industries Taught.—Farming and gardening are taught, also plain carpentering, painting, shoe-repairing and baking. The bigger boys are also expert fishermen.

The girls are taught thoroughly in all departments of housework. Their training includes cooking, laundry, bread-making, dressmaking, the care of milk and butter, the canning of fruit; also sewing and music. All mending of clothing and darning of stockings are done by the girls. One evening each week is given to sewing (fancy-work), for which the girls show much aptitude.

Moral and Religious Training.—The conduct of the pupils has been good. The pupils attend regular Sabbath services, also Sabbath school, and every day religious instruction is imparted to them.

Health and Sanitation.—With the exception of two outbreaks of measles among the children, the health of the pupils has been good. One outbreak occurred in July among the pupils while they were on holiday, only a few contracted the disease. A second attack broke out in school in January, brought by pupils being infected while

on leave of absence. There were 26 cases, 2 being members of the staff. When all were convalescent, the school was thoroughly fumigated and cleansed.

For sanitary purposes our location is excellent, but the waste water pipes and plumbing now need overhauling.

Water Supply.—From the beginning of last December, our supply of water has been from the new supply installed during the year. We have also 2 wells.

Fire Protection.—We have 4 Keystone and 6 Haverhill Eclipse fire-extinguishers and 6 fire-buckets distributed through the building. During the year the department gave a grant of $675 towards a water supply, chiefly for fire protection. The water is brought by gravitation from a 10,000 gallon tank, 750 feet from the school, sufficient head being obtained for fire-hose purposes. The school is indebted to Mr. Robert M. Ogilvie, architect to the department, who happened to visit the school when we were commencing operations, for his advice, making changes in the original plans, which, carried out, have so far given excellent results.

Heating and Lighting.—The main building is heated by a hot-air furnace, the new addition by stoves. Coal-oil lamps are used for lighting.

Recreation.—The boys play football and baseball and other games ; the pupils are very fond of swimming and canoeing. In the winter indoor games are provided.

General Remarks.—We thank the department for the grant made to secure a good water-supply, also we thank Agent Neill for his assistance in this work.

The school was inspected in June by Inspector Green.

I have, &c.,

JAS. R. MOTION,
Principal.

BRITISH COLUMBIA,
PORT SIMPSON BOYS' BOARDING SCHOOL,
PORT SIMPSON, July 20, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to forward the annual report of the boys' boarding school, Port Simpson, for the year ended March 31, 1908.

Location.—This school is situated not far from the northern boundary of the Northwest Coast agency, in Port Simpson, the most populous Indian village in British Columbia. It is located in the centre of a large constituency from which to draw pupils.

Land.—The land consists of a small area just sufficient for the building, playground and garden. The ground has been much improved by drainage. It is rich and productive, excellent for horticultural purposes.

Buildings.—The school, a large wooden building, forms one of a group of buildings owned by the Methodist Church, consisting of a church, mission-house, school-house and hill, girls' home, and an old school-house, now used as a carpenter's shop. The outbuildings in connection with the school are: play-room, wood-shed, drying-shed, stable and closets. The building is old and inadequate, a new school is needed.

Accommodation.—There is capacity for 25 boys and a staff of 3.

Attendance.—The attendance during the year has been good. However, with more comfortable quarters and suitable equipment. I am convinced that three or four times the present number of pupils could easily be obtained.

Class-room Work.—Good general progress has been made. The boys are studious and many of them evince a desire to get a thorough elementary education.

Farm and Garden.—No farming is attempted. Owing to the nature of the country farming as an industry would be of very little use to these north coast boys. Gardening is important, as there are on all the reserves, large and suitable garden plots. This year we have added considerable area for the cultivation of potatoes, turnips and carrots. Small fruits grow and bear well, and are always a sure crop. We produce nearly all kinds of vegetables.

Industries Taught.—The pupils are instructed in general carpentry, carving in wood, baking and gardening. A very necessary industry for boys who live on the sea-coast is boat-building. While we have only been able to start along these lines in a very humble way, it is a move of advancement in the right direction. There is now and will be for many years to come a great demand for small boats. Skill and industry in boat-building will fit the boys with a trade which will ensure them against future want. This work is congenial to the boys and they shew a skill in the handling of tools which is remarkable.

Moral and Religious Training.—The desire of the principal has been to make them manly and instil them with a love for truth and honesty. Regular instruction has been given on religious and moral topics, together with morning and evening prayers. All the pupils attend church services, Sunday school and week night service included. Suitable healthy literature has been provided.

Health and Sanitation.—The general health of the boys has been excellent there being no epidemic nor any serious case of illness. The sanitary conditions have been much improved by a proper system of drainage. A 4-inch tile drain with trap and gullies, has been laid from the school connecting with the main to the sea, put in by the department last year.

Water Supply.—The wooden troughs which formerly supplied the school have been replaced by wooden pipes bound with iron wire, from these wooden pipes water is conducted into the bath-room and kitchen of the school by well plumbed metal pipes. This improvement in the water system facilitates much the domestic work, as formerly all the water was carried in and out by pails.

Heating and Lighting.—There has been but little change during the year in this regard. Coal and wood stoves continue to be used. The lighting has been somewhat improved by the introduction of new coal-oil lamps with circular burners.

Recreation.—The recreation hours are always a pleasure. The Indian boy is ever ready to repair to the playground. He often fancies he is weary of work, but never too weary to play. Football and baseball in summer are the chief forms of sport, and in winter coasting is very popular if there is sufficient snow. Suitable games are provided indoors. During the winter a course of instruction was given on the parallel bars by Mr. Savage, the teacher, who, with the boys, gave a very creditable exhibition of their skill at a public entertainment.

Fire Protection.—A large tank has been purchased and will be put in place as soon as possible. Hose has been provided; 12 fire-extinguishers and 12 buckets of water are kept ready for emergency in the corridors.

General Remarks.—While our curriculum is not every extensive, we aim to make it thorough, believing that with a growing country well trained, manly, reliable boys, should have no difficulty in finding suitable employement.

There is no doubt Port Simpson is the most suitable location for a large school for boys. With this much required building, Indian education would receive a great impetus. We appreciate the visits of the officials and look upon them as productive of good results.

I have, &c.,

GEO. H. RALEY,

Principal.

British Columbia,
Port Simpson (Crosby) Girls' Home,
Port Simpson, March 31, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit the following report of the Port Simpson (Crosby) Girls' Home for the year ended March 31, 1908.

Location.—The school is located at Port Simpson, just outside the limits of the Tsimpsean reserve.

Land.—The land lies in section 4, township 1, range 5, Coast district.

It is owned by the Women's Missionary Society of the Methodist Church of Canada, and was acquired by purchase from Mr. Gordon Lockerby, Port Simpson, There is an area of 2 acres, which is well fenced, but only about one-fourth of an acre is cultivated. We have a place levelled for a playground for the girls. The land lies on the slope of a hill, the greatest elevation being towards the south and east. With thorough draining, the soil would be suitable for raising vegetables and small fruits.

The cost of labour for breaking and tilling the land has hindered us from having more cultivated.

Buildings.—The buildings consist of a house with three storeys and a basement, tank-house, chicken-house, wood-shed, drying-shed and play-room We had the house painted outside and considerable painting done inside, and a new floor put in the work-room.

Accommodation.—We have good accommodation for 45 pupils and 4 teachers.

Attendance.—The average attendance is 42·06, the total enrolment is 50 ; the number discharged, 9; the number admitted, 6. The present number in attendance is 41.

Class-room Work.—The classes have made good progress, and besides doing good work at their text-books have gained in general knowledge. They speak English fluently and some are fond of reading.

Seven have been promoted to standard II; 5 have been promoted to standard II, sr.; 3 have been promoted to standard III; and 7 have been promoted to standard IV.

We are pursuing the same course of study as that used in the public schools of British Columbia. The subjects taught are reading, writing, arithmetic, spelling, dictation, grammar, composition, geography, history, hygiene, music, Bible history and the Methodist catchism.

Twelve girls have taken lessons on the organ, and the whole school has had lessons in vocal music. Our organist, a pupil who had played for 4 years, was married in December and we miss her very much. Two of the younger girls are taking turns at being organist now.

Classification.—The pupils are classified as follows:—

Standard	I	7 girls.
"	II	4 "
"	II, sr	12 "
"	III	8 "
"	IV	15 "
"	V	3 "
"	VI	1 "
Total		50 "

Garden.—A small vegetable and flower garden is cultivated, as well as currant bushes and gooseberries.

During the year we have planted raspberry canes and some Logan and blackberry bushes, as well as rhubarb roots.

Industries Taught.—The industrial teaching consists of instruction and training in general housework, laundry, cooking, bread-making, dressmaking, sewing, mending, darning, knitting and fancy-work. They are also taught the care of hens and the raising of chickens. Several of the girls have taken a special course in cooking and nearly all of those discharged can cut and make their own dresses. Very satisfactory progress has been made in every department and even the smallest can patch and darn stockings very neatly. The girls, under the supervision of their teachers, have performed satisfactorily all the work of the institution, including kalsomining, housecleaning, painting woodwork, oiling floors, and feeding and caring for chickens. The ex-pupils who have gone to help others, have given excellent satisfaction as general servants.

Moral and Religious Training.—The pupils are carefully trained to be honest, truthful, obedient, industrious, kind and obliging. A Bible lesson is taught each day, so they are carefully instructed in Bible history and doctrine. The girls are improving, and those who have been discharged are doing well and keeping good homes.

Health and Sanitation.—The general health has been good. One girl died in May, 1907, and one who was discharged last year, died during February, 1908. We had an epidemic of grippe for a week in March, but all are better now. The sanitary condition is good.

Water Supply.—The water-supply is derived principally from a mountain stream at some distance from the house. A new dam has been built and a wooden pipe connects the reservoir with our tank, which has a capacity of 4,000 gallons. Pipes also bring the rain-water from the roof to the tank. The water is carried through the house by means of pipes, so we have hot and cold water on two floors.

Fire Protection.—We have fire-escapes, shaped like long sacks, furnishing means of escape from all the dormitories. Fire-drill is practised about once a month.

We have 2 stationary ladders from the ground to the roof and 2 on the roof besides one movable one with hooks; we have also 2 movable ladders. Buckets of water and ashes are kept in readiness on each flat and 12 pails are available in case of fire. We have 2 chemical fire-engines, a fireman's axe and 3 hatchets. Mention may also be made of the village fire-brigade within call, which rendered effective service when the roof caught from a burning chimney.

Heating and Lighting.—The heating of the institution has been accomplished by 6 stoves, one French range and one open grate. A furnace has been purchased, which will obviate the necessity of 3 of the stoves and assist the ventilation. We use soft coal and wood. Coal-oil lamps are used for lighting, bracket and hanging lamps being used exclusively for the pupils' apartments.

Recreation.—Regular hours are set apart for recreation each day. In wet weather the pupils play in the play-room where the air enters freely. The recreation consists of games, club-swinging, playing ball, swinging, walking, playing on the beach and general play. They have had regular physical culture exercises and calisthenics. Exercise in the open air is encouraged and insisted upon when necessary.

Ex-pupils.—Of the girls discharged during the year, 2 are married and are doing well in their own homes. One has done some dressmaking and gave good satisfaction, and both can cook well and do all kinds of housework. One played the organ well and the other was our best solo singer. Two other girls are at home with their parents and are good workers.

One of the ex-pupils is left several hours each day with the care of a little white child, a year and a half old, and does the housework; she has given excellent satisfaction. On December 4, Kate Price's wedding day, we had a reception for the ex-

pupils and the young people. A pleasant time with games and music was spent. A similar reception was held on the evening of December 18, when another pupil, Lucy Oakland, was married.

General Remarks.—We had an entertainment consisting of songs, recitations and a drill, which was appreciated by the people, and also a social evening for the parents and guardians Christmas night.

The only change in our staff was that our capable and efficient assistant matron, Miss Baker, left in September. Her place has been well filled by Miss Deacon. At the exhibition held in October the pupils exhibited bread, buns, tarts, a fowl dressed ready for cooking, writing, darning, patching and fancy-work; also dolls dressed. They obtained 17 first prizes and 12 second prizes. The work was very creditable.

Taken altogether the progress of the pupils in every department during the year has been satisfactory. We have been working steadily, helping them to build up characters that will stand the stress of temptation, and when we see them improving in honesty and purity, it is encouraging.

We are pleased with the way in which the ex-pupils turn to the teachers for help and counsel when in trouble or difficulty.

I have, &c.,

HANNAH M. PAUL,
Principal.

BRITISH COLUMBIA,
SECHELT BOARDING SCHOOL,
SECHELT, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of the Sechelt boarding school for the year ended March 31, 1908.

Location.—The Sechelt boarding school is pleasantly situated on a hill, about a quarter of a mile from the shore of Trail bay, on Sechelt reserve. The post office address is Sechelt, B.C.

Land.—The land connected with the school consists of about 3 acres and is divided into vegetable garden, orchards, flower gardens and playgrounds.

Buildings.—The main building, 83 x 36 feet, comprises: entrance hall, boys' parlour, children's dining-room, 2 private rooms, sitting-room, girls' school-room, sewing-room, girls' parlour, on the first floor; boys' lavatory, boys' school-room, dormitory, girls' lavatory, girls' infirmary, private room on the second floor; 2 dormitories, 2 toilets, 2 bath-rooms and a room for the boys' guardian on the third floor.

The north wing, 30 x 28 feet, is divided as follows: first floor, kitchen, dining-room, store-room; second floor, 3 rooms for the staff and the boys' infirmary; third floor, chapel.

All the rooms are airy and well ventilated. Two water-closets have been built lately and a cesspool has been dug in the woods at some 50 yards from the school-house.

Accommodation.—Ample accommodation is provided for 60 pupils and the staff necessary to carry on the work.

Attendance.—The attendance has been very good throughout the year.

Class-room Work.—The programme of the department has been followed and the progress is quite satisfactory. The majority of our pupils are diligent and take a deep interest in their studies. Quarterly examinations have produced a keen rivalry between boys and girls.

At the present time, they are graded as follows:—

Standard	I.	14 pupils.
"	II.	9 "
"	III.	12 "
"	IV.	10 "
Total		45 "

Farm and Garden.—The boys, aided by the girls and under the sisters' supervision, do all the gardening work. They have cleared in 3 years all the land under cultivation. It is a pleasure to see them at their work, they do it so cheerfully. The girls are fond of flowers and have their own flower beds. Both boys and girls have a small vegetable garden of their own, which they cultivate with care.

The system of irrigation has been completed in all the gardens by Mr. J. Smith and the big boys.

Industries Taught.—The boys are taught gardening, carpentering, shoe-repairing, &c.

Last summer they made miniature racing canoes and sail-boats; we sold them and with the money we bought a few tools.

The girls are trained in domestic work. They do all the mending in the school; the big girls can cut and make their own dresses, some are proficient in crochet and fancy work. All can knit, sew, mend, darn, &c.

In summer all the afternoon is taken up for manual work and they have time enough to make the pretty little Indian baskets and cradles which the visitors are glad to buy as souvenirs from Sechelt. Ten of the girls have earned enough money to pay for their uniforms, which they made themselves under the direction of the sisters.

Moral and Religious Training.—Careful attention is paid to the moral and religious training of the pupils. Half an hour is devoted each day to religious instruction given by the Reverend Father in charge, or one of the members of the staff.

A weekly report, concerning the work and the conduct of each pupil, is effective to keep alive emulation and to secure order.

I am pleased to say that the behaviour of the children has been very good during the past year.

Health and Sanitation.—Last April, grippe, and an epidemic of pneumonia broke out amongst the Indians and the school children. Three boys were taken sick; 2 recovered, the third died of tuberculosis. In February we had a case of light fever. The general health of the pupils has been very good throughout the year.

Under this heading I beg to remark that it would be a great boon if the department were to appoint a doctor to visit our school from time to time or at least in cases of serious illness.

Water Supply.—The quality of the water can hardly be surpassed. The pipes, partly granted by the department, have been laid and we hope to have a very good supply of water, even during the dry season.

Fire Protection.—Six Underwriter fire-extinguishers, 24 buckets, 200 feet of hose, and a ladder are kept in convenient places and are always ready in case of fire. The children are drilled according to the instructions of the department.

Heating and Lighting.—The school-house is heated by stoves and lighted with coal oil and gasolene lamps.

Recreation.—Recreation is taken as much as possible in the open air and always under the supervision of the sisters. Shooting with bow and arrows, baseball and football are the favourite pastimes of the boys; while the girls amuse themselves in skipping, swinging, reading, &c.

Both the boys and girls take an hour's walk each day, when the weather permits. In summer they spend all the afternoon outside working or playing.

General Remarks.—At Christmas, the children had their Christmas-tree, as usual, and were delighted with the nice presents given them by the generous Santa Claus, who never forgets them. On this occasion they gave an entertainment to our white neighbours and also to the Indians. The programme, though simple, was rendered with fair success.

Before closing this report I wish to convey my thanks and those of my devoted helpers to the department for granting us the class-room supplies we asked for, and to the superintendent, inspector and agent, who have on every occasion shown us the kindest concern and interest.

I have, &c.,

SISTER THERESINE,
Principal.

BRITISH COLUMBIA,
SQUAMISH BOARDING SCHOOL,
NORTH VANCOUVER, April 6, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to forward the annual report of the Squamish Mission boarding school for the year ended March 31, 1908.

Location.—This school is beautifully located on the north shore of Burrard inlet; opposite the thriving city of Vancouver, and about 4 miles therefrom. It is not on a reserve.

Land.—The land connected with the school is the property of the Sisters of the Holy Infant Jesus, in charge of the school, and consists of about 14 acres, of which about 4 are under cultivation.

Buildings.—The new building consists of: entrance hall, 2 parlours, a large school-room and sewing-room, the latter is used also as recreation-room for the girls on rainy days. On the second floor are: the chapel, vestry, several private rooms for the members of the staff. The third floor is taken up by a large dormitory and lavatory for the girls. On each floor are bath and toilet rooms. The old building comprises: the kitchen, 2 dining-rooms, 2 store-rooms, school-room, with small parlour for the boys. On the second floor are 2 dormitories, the principal's room, the boys' and girls' infirmary and bed-rooms for the teachers.

The outbuildings consist of: wood-shed, meat-house, hen-house, stable, barn and laundry; this last building comprises wash-room, provided with 12 wash-tubs, each having a tap for hot and cold water; boiler-room with 2 large boilers and heater, and the drying-room with everything convenient to dry the clothes during winter.

Accommodation.—We have good accommodation for 60 pupils and the necessary staff.

Class-room Work.—The progress in the school-room throughout the year has been most satisfactory. All the pupils attend school both forenoon and afternoon. The school hours are from 8.30 to 11.45 a.m., and from 2 to 4 p.m., besides an hour for study. The programme of studies prescribed by the department is followed as far as circumstances will admit of.

The subjects taught are: reading, writing, spelling, arithmetic, history, geography, grammer, dictation, Bible history, catechism, vocal and instrumental music. The present classification of the pupils is as follows:—

	Pupils.
Standard I.	20
" II.	17
" III.	11
" IV.	10
" V.	2
" VI.	4
Total.	64

The pupils speak English fluently; even the new pupils are making fair progress in this language.

Farm and Garden.—There is no farm connected with the school: about 2 acres of land are laid out in a vegetable garden, orchard and flower beds. We raised this year an abundant supply of cabbages, turnips, carrots, beans, pease, lentils, lettuce, &c. Our fruit-trees, which are kept in good order, gave us this year a very good crop of peaches, pears, plums and apples, some of the latter weighed 1½ pounds.

Industries Taught.—This being a boarding school, it is impracticable to do much as regards trades. However, the boys are instructed in the different branches of gardening; besides this, they take care of their school-room, dormitories, saw and chop wood, do the glazing, some carpentry work, and also repair their own shoes.

The girls are taught thoroughly in all departments of housework. Their training includes: cooking, laundry work, mending, darning, hand and machine sewing, dress-making, embroidery, crochet lace; in a word all kinds of fancy-work, in which they show themselves very expert.

Moral and Religious Training.—This has always held the first place in our programme. Besides their daily religious exercises, morning and evening prayers, the pupils are instructed in the teaching and doctrine of the Roman Catholic belief. No pains are spared to refine their character, elevate their sentiments, and make them good Christians and useful citizens. The children seem to take a great interest in all religious exercises. Their conduct has been most satisfactory during the whole year. Punishments have been seldom required.

Health and Sanitation.—The health of the pupils has been fairly good during the winter. But last summer measles broke out in the cities of Vancouver and North Vancouver. I immediately asked the department for authority to send the children home, and it was granted; but very few escaped the disease, though none died of it. However, I am sorry to state that one of our little girls was suddenly taken sick with an attack of pneumonia and died at home after a few days illness, at the end of December; we had also 2 slight cases of typhoid fever, but with no bad results.

Water Supply.—The building is connected with the city water-supply, and thus abundantly supplied with pure crystal water.

Fire Protection.—Two Stampel fire-extinguishers, 8 glass-lined chemical extinguishers, one dozen fire-buckets, 300 feet of rubber hose, 2 axes and 2 ladders are kept in readiness for use.

Heating and Lighting.—The heating of the institution is done by means of wood-stoves and the fire-wood has to be purchased and hauled to the school from a distance of about 2 miles. Electric lamps are installed through the whole building.

Recreation.—Swimming, boating, berry-picking, baseball, football and lacrosse are enjoyed by the boys during summer; while the girls, more quiet, play chess, dominoes, lotto, &c.; they are also fond of reading and dressing dolls. Altogether our boys and girls have a very happy time at school and seem to appreciate the benefits of education. At Christmas we had a concert attended by over 200 pupils, both whites and Indians. The programme was splendidly rendered by girls and boys. At the end of the entertainment, Santa Claus was introduced on the stage and loaded the children with toys and candies.

General Remarks.—In closing this report, I feel it my duty to express my most sincere gratitude to the department for supplying the school with school material.

Mr. A. W. Vowell, our superintendent, Mr. A. E. Green, our inspector, and Mr. R. C. McDonald, our worthy agent, for their ever-ready co-operation in all matters connected with the school must receive here my grateful thanks. I also appreciate greatly the devotedness of all the members of my staff; with their zealous aid, we notice rapid progress being made in the development of the intellectual activity of the children.

I have, &c.,

SISTER MARY AMY,
Principal.

British Columbia,
St. Mary's Mission Boarding School,
P.O. Box 234, Mission City, March 31, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit the annual report in connection with this school for the fiscal year ended March 31, 1908.

Location.—The St. Mary's Mission boarding school is beautifully located on the north bank of the Fraser river, about 40 miles east of the city of Vancouver. The buildings stand on an elevated plateau and command a picturesque view of the Fraser valley with the Sumas and Cheam mountains forming a background that terminates in the everlasting snows of Mount Baker in the State of Washington. The proximity of the Canadian Pacific railway and the double service of comfortable steamers which ply daily between New Westminster and Chilliwack, make access to the school easy for the pupils and our many interested friends who call to visit the institution.

Land.—About 310 acres, the property of the Oblates of Mary Immaculate, is attached to the school. About 200 acres of this land is still under heavy timber, but year after year new clearings can be noticed, thus adding in value and extent to our well worked and fertile farm. The soil is most productive and the crops of hay, roots and vegetables raised yearly are all that could be desired.

Fruit yields well, especially apples, pears, plums and the different kinds of small bush fruits. Our orchards have been thoroughly cleaned this year. The farm lies in the Mission City district municipality, section 2, townships 3 and 4.

Buildings.—The main buildings of both boys' and girls' schools measure 75 x 35 feet in extent, with two additional wings; one on each building, and contain the necessary apartments for comfort and accommodation of both pupils and teaching staff. The additional buildings during the past year consist of a larger and spacious root cellar, 30 x 18 feet, a new granary, 16 x 12 feet, and a building, 28 x 16 feet, to accommodate the parents and friends of the children who come from time to time to visit them.

Accommodation.—There is ample accommodation for 90 pupils and the necessary staff.

Attendance.—On an average 78 children, 33 boys and 45 girls, have been in attendance during the past year.

Class-room Work.—The secular education of the children is attended to by 4 zealous and devoted nuns of the Order of St. Ann. The schedule of class hours is,

from 8 a.m. to 12 a.m., with one recess intervening, and from 4.30 p.m. to 6.15 p.m., in winter; in summer the outdoor work is continued till 6 p.m.

The hours of music and band practice are from 7 to 8.30 p.m.

The official programme of studies prescribed by the department is followed as faithfully as possible.

Owing to the fact that our children for the greater part are quite young, more time and attention must be given to elementary work.

Rev. Brother Collins, our devoted disciplinarian, is untiring in his efforts to sustain the long standing and well-merited reputation of the Mission City Indian boys' band.

The boys' and girls' separate choirs, heard not only at our parish church services on Sundays and holy-days, but also at the numerous musical recitals and entertainments given by the school children during the course of the year, sufficiently prove that Sisters Mary Rogation and Mary Romuald spare no efforts in the line of music.

Farm and Garden.—The land under cultivation attached to our school was planted last year with grain, hay and root crops, 3 acres of the farm being under oats, 2½ acres under wheat, 30 acres in hay, 5 under potatoes, 2 under peas, and about 25 acres with the unreclaimed land, served as pasture ground for our live stock.

The crops raised were excellent. In addition to our fruit orchard, a few acres used as a garden produced sufficient vegetables of various kinds to meet the wants of both schools. Our fruit-trees, over 200 in number, were pruned and sprayed according to government fruit regulations.

Industries Taught.—The rudiments of carpentering and painting are the only trades taught the boys, 3 of whom have made fairly good progress during the past year.

As our boys are supposed to work a few hours in the afternoon of each day, except Saturday, they have sufficient opportunity to learn the different branches of farming and gardening. The care of live stock and the work of the dairy are taught them by an experienced instructor.

The boys render valuable service in the seeding and harvesting of our crops.

The sisters instruct the girls in the culinary department, dressmaking, knitting, and general needlework. Several of the larger girls have proved their ability in fancy needlework. At the local exhibition last fall our girls obtained quite a number of prizes for needlework, 21 of which were first prizes.

Moral and Religious Training.—The moral and religious training of the children is carefully and strictly attended to. Besides their daily religious exercises, morning and evening, they are instructed in the teaching and doctrine of the Roman Catholic Church.

No efforts are spared to elevate the minds of the pupils to the highest standard of morality and righteousness.

Health and Sanitation.—The health of the pupils during the past year was generally good.

The sanitary system in both schools has been much improved recently by the opening of new drains and the renewal of closets and cesspools. Three up-to-date closets have been installed in the girls' school. A considerable sum of the Oblate Order's private funds has been spent to perfect the already good sanitation.

The children are obliged to take baths frequently, and their clothes are kept scrupulously clean and neat, thanks to the efforts of the sisters in charge.

Water Supply.—This comes to us through pipes running from St. Mary's creek, which has its source in the mountains in the rear of our property and empties into the Fraser river. The supply is good and abundant, thanks to the government for the grant of $2,250, which has enabled us to install a new water system, which has proved satisfactory for all our requirements.

Fire Protection.—Our fire-appliances consist of 6 chemical extinguishers, 4 fireman's axes, and 48 pails, kept in readiness in case of fire. The fire-alarm is rung

from time to time to remind the children of the admonitions given them to seek safety in case of fire. The older pupils are taught the use of the fire-appliances. Added to this, we have this year obtained further protection from the new water system and necessary hose appliances, 140 feet of which has been placed for the service of each school. There is a pressure from each of the stand-pipes of about 60 lbs., sufficient to force the water over either of the buildings.

Heating and Lighting.—Stoves are used to heat both buildings, and as wood is still quite plentiful on our property, the apartments can be kept quite comfortable without entailing any considerable expense. Coal-oil lamps furnish us with sufficient light.

Recreation.—Strict attention is given to the recreation of our children, as we are well aware that it is a conducive agent both in their mental and physical development. Outdoor games, weather permitting, are much indulged in by our children in their large and well kept playgrounds. With their respective disciplinarians they are allowed, weather permitting, to spend their half-holidays in selected picnic grounds in the neighbouring woods. Songs and band recitals together with the different indoor games, make their recreation cheerful and pleasant.

General Remarks.—During the past year, I am pleased to state, good work has been accomplished in both schools. Thanks to the generosity of the department we have been able to make several very necessary improvements.

In particular I might mention our water system, which has met with the approval of our worthy inspectors. Mr. McDonald, our agent, proved himself most energetic in helping to make the work a success, to him we owe a debt of gratitude.

Our schools were examined regularly during the past year by our worthy and devoted inspector, Mr. Green. The kind and much appreciated encouragement extended by him to our entire staff and pupils makes us look forward to his visits with pleasure. To him also do we extend our sincerest thanks. In a word, both pupils and staff of St. Mary's Mission school are most grateful to Mr. Vowell and the entire department for the constant interest shown in our work.

I have, &c.,
J. P. O'NEILL, O.M.I.,
Principal.

British Columbia,
All Hallows Boarding School,
Yale, March 31, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit our annual report for the year ended March 31, 1908.

Location.—This school is situated about half a mile west of the Canadian Pacific railway station of Yale, B.C.

It stands on the right bank of the Fraser river, about a mile below the mouth of the famous Fraser canyon.

The school is not on a reserve.

Land.—The school buildings stand in prettily laid out grounds of about 4 acres in extent, in the township of Yale.

This land was bought by friends of the school authorities, aided by a government grant of $500, and is held in trust for the school.

The property is bounded on one side by a narrow ravine through which rushes a rapid mountain torrent; in front, below a high bank, flows the Fraser river, only separated from the school land by the Canadian Pacific railway line, and the government road; at the rear of the buildings a high spur of the Cascade mountains rises abruptly, giving an air of picturesque grandeur and rugged beauty to the whole place.

Buildings.—These consist of a large school building, a small school chapel, and a house for teachers and visitors. A good deal of painting and some repairing was done inside the school building in August, 1907.

Accommodation.—Accommodation is provided for 30 pupils and 6 teachers.

Atendance.—All the girls are boardsrs, the atendance in the school-room therefore suffers no interruption, except in occasional cases of illness, when pupils are removed to the hospital, but continue to remain under the guardianship of the principal.

Class-room Work.—This is under the direction of the head mistress, who holds a first-class teacher's certificate, and who is assisted by another certificated teacher. Religious instruction is given by the sisters of the community.

Farm and Garden.—Half an acre of land is devoted solely to the cultivation of fruit and vegetables, while flower beds are laid out nearer the house. The 'Yale cherries' have always attracted considerable notice.

Industries Taught.—Housework, cooking, bread-making and needlework are taught. A class has been lately formed where the girls are taught basket-making, by one of the most noted basket-makers of their own race. It is hoped thus to help to perpetuate this art, and also to give the girls instruction in some practical handicraft which will stand them in good stead when returning to their homes.

Moral and Religious Training.—Religious instruction is imparted carefully by the sisters. The children attend two short services in the school chapel daily, with an additional service on Sunday, either in the chapel or the parish church. Twice a month, and at the greater festivals the bishop or chaplain visits the school to conduct services ,and give instruction to the children. The elder girls attend choir practice once a week that they may learn to take an intelligent part in the services of the church.

Earnest endeavours are made to instil such religious and moral principles into the children that, on their leaving the shelter of the school, they may be better fitted to cope with and resist the adverse influences they will then be called upon to face.

Health and Sanitation.—There were 10 cases of measles last autumn, and, in spite of the greatest care being taken, one child is still in the hospital from the after-effects of it, though she is now rapidly recovering from her tedious illness. There have been 2 cases of swollen glands, and an epidemic of influenza in the winter, otherwise the health of the children has been good.

The sanitary condition of the buildings is excellent. Several minor repairs have been taken in hand by a competent plumber.

Water Supply.—There is a good supply of excellent water afforded by a mountain stream close to the house. The water is received into a capacious cistern, inclosed in a stone tank-house, whence it is distributed throughout both houses by means of iron pipes, while the overflow runs into a flume, and is used for irrigating purposes in the vegetable garden. Our water rights secure to us 70 inches of water for the use of the school.

Fire Protection.—Water is laid on both upstairs and on the ground floor of the main buildings. There is about 100 feet of hose on the premises, and two long ladders, in addition to which we have been supplied by the department with an axe, 4 chemical fire-extinguishers, and 30 buckets. Fire-drill is taught, and practised occasionally.

Heating and Lighting.—The school building and the chapel are heated by hard coal 'base burners.' A new soft coal laundry stove (with boiler and connecting pipes)

has just been placed in the school play-room. The house occupied by the staff has several old-fashioned open fireplaces, and a large hall stove for burning wood only. The kitchen is fitted up with a soft coal French range. All pipes pass through brick chimneys.

Coal-oil lamps are almost entirely used for lighting purposes. These lamps are attached to the walls or ceiling, in rooms occupied by the children, or in the passages. Candles in addition to lamps are used in the chapel, and sometimes by the teachers.

Recreation.—An hour's walk is taken daily with one of the teachers in suitable weather. The girls have a large playground with a summer house and a garden for each child, where they work and play in their spare time. A swing and see-saw are just being placed there as well. In rainy weather they have games indoors. During the Christmas holidays they spend a great part of the afternoon in coasting or playing in the snow. In the summer holidays, long berry-picking expeditions up the mountains are undertaken.

General Remarks.—The annual prize day was held in June. The Archdeacon of Columbia took the chair and distributed the prizes on that occasion, and in speaking to the children urged them to cherish noble ambition, to fulfil every duty in the best way, and so to order their future lives and homes as to be an example to their people, and a credit to the school.

Prizes were distributed for class-room work, housework, cooking, bread-making and dressmaking; also a silver medal for good conduct.

A programme of songs, recitations, musical drill, &c., was very creditably performed.

I have, &c.,
CONSTANCE, SISTER SUPERIOR C.A.H.,
Principal.

BRITISH COLUMBIA,
ALERT BAY INDUSTRIAL SCHOOL,
ALERT BAY, April 2, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report of the Alert Bay industrial school for the year ended March 31, 1908.

Location.—The school is healthily situated on the Alert Bay industrial school reserve, is erected on rising ground at the west end of Alert bay, commands a pleasant view to sea, and is sheltered from northerly winds.

The post office address is Alert Bay, British Columbia.

Land.—There are 410 acres connected with the school, 5 of which have been cleared and fenced. The soil is mostly gravel and is thickly covered with bush. It is best adapted for pasture-land. It is difficult to clear. Potatoes do well for the first and second years.

Buildings.—The school-building is of wood, 60 x 40 feet, strongly and tastefully erected, with plastered walls and light airy rooms. Attached to the main building is a wing, 54 x 18 feet, comprising class-room and workshop. The outer buildings comprise trades instructor's house, root-house, cloak-room, tank-house, wood-shed and tool-shed.

Accommodation.—There is room for 35 boys and 3 officers.

Attendance.—The average attendance was 27.

Class-room Work.—The work done in class has been encouraging. The Rev. A. J. Hall, B.D., has taught for the greater part of the year, ably assisted by George Martin Luther, who was educated in this institution.

The pupils were graded as follows:—

Standard	I.	3 pupils.
"	II.	5 "
"	III	7 "
"	IV.	9 "
"	V.	3 "

Industries Taught.—All the smaller boys have had definite and systematic training in the general housework of the institution. The older boys have had regular instruction in the carpenter-shop under Mr. Carter. Marked progress has been made.

The laundry work was done by the boys, under Miss Warrener.

Farm and Garden.—The flower garden has been tended by the matron and smaller boys. The vegetable garden yielded a good supply of vegetables and fruit.

A fair crop of potatoes was raised.

Moral and Religious Training.—The moral and religious welfare is strictly and conscientiously looked after. The moral atmosphere of the school is good and must tell for good in the lives of the boys.

The pupils are continually taught the necessity and advantage of purity of mind and body. This is done by daily prayer and Bible lessons as well as talks with individual boys on suitable occasions, by the principal and his staff.

The pupils attend divine service morning and evening on Sunday, and Sunday school in the afternoon. The boys form the choir of the village church and have taken an interest in it.

Health and Sanitation.—The general health of the pupils has been good. An epidemic of measles of a grave nature caused anxiety. Great care was taken and no bad results ensued.

The sanitary arrangements are good. A wooden drain carries the water from the kitchen, bath room and wash-house to the sea. A new drain was put in in the beginning of January. Cleanliness is enforced and disinfectants used freely.

Ventilation is carefully attended to.

Water Supply.—The water is supplied to the house from a well near. It is pumped up by the boys into a large tank, which is always kept clean. The water is pure.

I have to thank the department for a new pump supplied.

Fire Protection.—Four chemical fire-extinguishers, two fireman's axes and twelve buckets are kept in places of easy access.

Fire-drill, in accordance with the department's instructions, is often practised, both day and night, and the pupils are well prepared for emergency.

Heating and Lighting.—The school is heated by ordinary box stoves. Coal-oil lamps are used, and are hung from the ceiling.

Recreation.—Football still retains its place as the most popular sport, and they have played with vigour all the year round. A very amusing match was played a few days ago by the pupils against the sailors of the United States revenue cutter *Patterson*, and resulted in a complete victory for the school, seven goals to none. The pupils were, however, beaten by a team of old pupils, a few days after, five goals to none. This shows how the keenness for football is kept up. Indoor games, draughts, word-making, crokinole, and parlour tricks have their places during the winter evenings.

The brass band has been a great pleasure to pupils and visitors.

General Remarks.—My thanks are given to the Rev. A. J. Hall for acting as principal during my furlough to England.

During my stay in the old country it was my privilege to visit many boarding and industrial schools, and notwithstanding all their modern, up-to-date apparatus, the departmental schools of this province compare very favourably with them.

Indian Agent Halliday has paid regular visits to the school, which were appreciated. The inspector, Rev. A. E. Green, has twice inspected the school.

I have, &c.,

A. W. CORKER,
Principal.

BRITISH COLUMBIA,
CLAYOQUOT (CHRISTIE) INDUSTRIAL SCHOOL,
KAKAWIS, WEST COAST, March 31, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

Location.—The Clayoquot (Christie) industrial school is situated on a cozy cove of Deception channel, in Clayoquot sound, on the west coast of Vancouver island. The location is an ideal one, being central on the coast, secluded from the nearest Indian reserve, Opitsat, and the Clayoquot settlement, and well sheltered from cold winds. Mail reaches the school by private mail bag direct from the Victoria post office.

Land.—The school owns 175 acres of land, the same having been pre-empted by the Roman Catholic Archbishop of Vancouver Island. The land is heavily covered with mostly worthless timber and dense underbrush, which offers great difficulties to cultivation, and at present yields no material advantage to the institution, beyond a small amont of garden produce.

Buildings.—The school building is a commodious, substantial, frame structure of two and a half storeys with basement, and has a frontage of 144 feet and a depth of 52 feet. The basement walls are of solid concrete. In the basement are located gymnasiums, furnace-room, cellars, paint and plumber's shops. The first floor includes officers', boys', and girls', entrance halls, parlour, sitting-room, Indian room, kitchen, pantries, store-room, pupils' and officers' dining-rooms, senior and junior class-rooms, separate boys' and girls' recreation-rooms, two sewing-rooms, and two toilet-rooms. On the second floor are the girls' dormitory with lavatory adjoining, two infirmaries, with bath-rooms attached, for boys and girls, two officers' bath-rooms, principal's room, eight bed-rooms, and chapel, 32 x 48 feet, and vestry. The third floor, the attic, comprises the boys' dormitory, toilet-room for night use, and two clothes-rooms.

In the rear of the main building stands the laundry, 14 x 32 feet, and back of it is the wood-shed, 36 x 50 feet, with carpenter-shop and shoe-shop under the roof. At some little distance from these buildings is the storehouse, 12 x 28 feet. For our cows we have only a temporary barn, which was enlarged last summer to accommodate six cows. The instructor has for himself and family a cottage, 24 x 30 feet, which contains two bed-rooms, kitchen, and sitting-room and has a wood-shed adjoining.

No additions have been made since the last report, but in the basement the boiler-room has been partitioned off by concrete walls, likewise a cold storage room for keeping meat.

Accommodation.—The institution has comfortable accommodation for 75 pupils and a staff of 10.

Attendance.—The average attendance for the year was 60, 27 boys and 33 girls; the highest attendance was 63, the lowest 55; discharged were 4 boys and 7 girls; admitted 9 boys and 4 girls, 1 girl died while home on sick leave. The present enrolment is 29 boys and 29 girls.

Class-room Work.—All pupils attend school from 8 a.m. to 10 a.m. While the seniors are in school from 10 a.m. to noon, the juniors are at their industries. The time of the afternoon is devoted to industries, the juniors, however, have the rest of their classes from 2 to 4 o'clock. The subjects taugh are reading, writing, arithmetic, spelling, dictation, letter-writing, composition, geography, history of the province and of Canada, catechism, Bible history, hygiene, vocal and instrumental music, and drawing. Written and oral examinations are held alternately each month. The pupils have made good progress, especially in arithmetic, history and geography.

Classification.—At the end of the term the pupils were graded as follows :—

	Boys.	Girls.	Total.
Standard I.	1	0	1
" II.	8	4	12
" III	3	4	7
" IV.	6	13	19
" V.	2	6	8
" VI.	7	2	9
Total.	27	29	56

Farm and Garden.—The school is at a great disadvantage in having no farming lands, no fields, no pastures. We have but a small garden and this in patches, comprising perhaps 2 acres at the most. It yielded last year about half a ton of potatoes, 200 pounds each, of carrots, turnips, parsnips, 800 heads of cabbage and cauliflower, 100 pounds each, of pease and beans, 12 gallons of small fruits and some other small vegetables. Feed for the stock has to be imported, hay costing us, landed, $33 a ton. Both junior and senior boys are taught gardening, also some girls anxious to learn, receive practical instruction in planting and seeding.

Industries.—*Baking.*—Eight boys learned to prepare the bread-dough, and 12 girls in turns baked the bread in the kitchen range. The girls do the small baking of bread and pastry.

Boat-building.—No boats were built this year, but the boys apprenticed to this trade did a fair amount of repair work, also made many pairs of new oars.

Carpentering.—There were 10 apprentices receiving instruction in this trade. They partitioned off the old chapel into rooms, ceiled unfinished portions of the new additions, enlarged the barn, made tables, cupboards, ladders, laid a new tramway from the beach to the house, built new cars, squared and set new posts for the clothes-lines and attended to all the repairing in this line.

Dairying.—Six boys were taught the milking of cows and the feeding and care of stock. Girls were instructed in butter-making.

Fishing.—Our boys this year again, supplied the institution with a liberal amount of fish, viz.: cod, herring, halibut and salmon. The run of salmon in these waters was not as good, however, as other years. Fishing is done by means of net, trolling, trawl-line and the old-fashioned herring rake.

Laundrying.—The boys are taught to wash their own clothing; they also assist the girls in the heavier work of washing; the latter, however, are instructed in all the details of laundrying.

Masonry.—Two boys, with the help of others, built the concrete walls mentioned above under the head of 'buildings.' A neat basin made by them for the fountain, in front of the main building, deserves special mention.

Net-making.—There was no call for any kind of work in this line during the past year.

Painting.—Six apprentices have done creditable work at painting, staining, fine varnishing and polishing.

Plumbing.—All and any little repairs, of the many plumbing fixtures in the institution, have been promptly and faithfully attended to by 2 boys placed in charge.

Shoemaking.—Five boys are apprenticed to this trade at present and do good work.

Girls' Industrial Work.—All girls are taught and assigned tasks, according to ability and proficiency, in the different departments of domestic work. They take their turns in the kitchen, cooking and baking, in the preparing of food, in having charge of rooms, in feeding of poultry. Each girl has to pass through regular courses in plain sewing, hemming, darning, plain and fancy knitting, mending, sewing by machine, hem-stitching, cutting, fitting, and finishing of dresses; in crocheting, lace-making, and embroidery. All of the girls' garments and most of the boys' clothes are made at the school by the girls. Our girls having a reputation for exquisite work have done much remunerative fancy-work for outsiders.

Moral and Religious Training.—We are trying to the best of our ability to make the school for its inmates, the cradle of civilization, the nursery of faith, the home of industry, the vestibule of Catholicity, and the open door of self-respecting and self-supporting citizenship. Our efforts are therefore directed towards enlightening the mind by the teaching of the truths and the precepts of the Christian religion, and, in a greater measure towards strengthening the will of the children, by exhorting them to well-doing and guiding them in the daily practice of virtue. The conduct of our children has been highly satisfactory during the past year. They receive religious instruction daily.

Health and Sanitation.—The school, like all Indian habitations on the coast, was visited by an epidemic of measles in January and February. Some 40 children contracted the disease, but recovered rapidly, by careful nursing, and owing to good sanitary conditions. One pupil while on a visit to her home, contracted the disease there and died from complications. The health of the pupils at the school has otherwise been very good. After the epidemic the whole house, all bedding and clothing, were fumigated and thoroughly disinfected. Sewerage and sanitation are very good.

Water Supply.—The water-supply is obtained from a small mountain stream having its source on the southern slope of Lone Cone. At a head of about 150 feet the water is brought by a flume to an 8,000 gallon tank and thence piped to the school by 2-inch galvanized-iron pipe for a distance of nearly 1,200 yards. The water is excellent and abundant.

Fire Protection.—Ten chemical extinguishers, 24 fire-pails, 2 fireman's axes and 200 feet of 2-inch rubber lined web hose are kept in readiness for an emergency in convenient places. Pupils are drilled at frequent intervals in speedily vacating the building, day and night, and in the use of the fire-fighting appliances. Outside fire-escapes are provided for safe exit in case of fire. The pressure from the water main is about 60 pounds.

Heating and Lighting.—The heating plant is a direct two-pipe open tank hot water system, and gives perfect satisfaction and, besides, is very economical in the consumption of fuel.

For lighting we use coal-oil lamps.

Recreation.—The pupils have in the sandy beach, right in front of the school, a splendid playground for all kinds of outdoor exercises and sport, and they make liberal use of it, too, playing football, jumping, vaulting, racing. The girls have swings, skipping ropes, croquet and ten-pins. For the rainy season they are amply supplied with favourite indoor games. They also have drills and calisthenic exercises.

General Remarks.—This institution has been in operation now seven years. During this period the attitude of our West Coast Indians towards education, and in particular towards this school, has changed for the better, wonderfully. Bitter

prejudice and frantic antagonism have vanished beyond a speck. Parents are anxious to have their children educated, and the children show no less eagerness to learn English and useful trades. Of course, much of this change is due to some extent to the good work of zealous and self-sacrificing missionaries on the coast, and I thank them for their disinterested co-operation. On the other hand it must be stated that the Indians themselves are beginning to wake up to the new conditions of life that confront them. It is a pleasure for me to mention that many of the admissions granted this year have been entirely spontaneous either on the part of the pupils being admitted, or on the part of the parents seeking admission for their children. I should be guilty of ingratitude, however, were I to pass over in silence the hamonious work of my faithful staff and the many valuable services, both in word and deed, of Superintendent A. W. Vowell, Agent A. W. Neill, and Inspector Green, who, each, are ever alert and determined to promote the cause of the Indians under their jurisdiction and to see the regulations and instructions of the department carried out conscientiously. The combined wisdom, vigilance, energy and determination of these gentlemen and of the members of the staff, devoted heart and soul to their work, are next to God's goodness and mercy the mainstay of the successful work of this institution. To them all and every one I offer my unstinted mete of sincerest gratitude.

I have, &c.,

P. MAURUS, O.S.B.,

Principal.

British Columbia,
Coqualeetza Industrial School,
Sardis P.O., March 31, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report for the year ended March 31, 1908.

Situation.—The Coqualeetza industrial school is situated on the south side of the Fraser river, and is about 4 miles from the steamboat landing. Boats ply daily between Chilliwack and New Westminster, a distance of 50 miles. Connection is made with the C. P. R. at Harrison station, which is on the north side of the Fraser river. The school is 3 miles from the city of Chilliwack. It is not located on a reserve.

Land.—There are 90 acres of excellent land in connection with the school. The farm comprises parts of lots 38 and 297, group 2, in the district of New Westminster, and is within the municipality of Chilliwack. The land is all cleared and under cultivation. A fine stream of spring-water runs through it, making it an ideal farm for dairy purposes. The missionary society of the Methodist Church owns the property.

Buildings.—These are (1) the main building, containing kitchen, dormitories, lavatories, laundry, recreation-rooms, school-rooms, gas tank room, dining-rooms, clothes-rooms, furnace-rooms and a dairy; (2) the residence of the principal; (3) the residence of farm instructor; (4) three large barns; (5) a granary; (6) a wagon and implement shed; (7) a wood-shed; (8) a bake-house; (9) a hen-house; (10) a root cellar.

Accommodation.—The main building will accommodate 90 pupils and a staff of 8 or 10 teachers.

Attendance.—One hundred and five pupils have been in attendance during the year. The average attendance has been over 85; 18 were admitted; and 9 were discharged early in the year; 3 were allowed home on holiday and never returned. Others were very dilatory about returning, thus lowering the average attendance. There are now 96 pupils on the roll.

Class-room Work.—The hours of study in the school-room are from 9 to 12 a.m. and from 1 to 4 p.m. Each pupil is in the school-room one-half of each day, attending in the forenoon one month and in the afternoon the following month. The regular course of study of the schools of the province of British Columbia is followed. Good faithful work has been done and the standing of the school is excellent. There are 6 pupils in the school at the present time who have nearly completed the course of study. They are bright and intelligent. The pupils that come in at 10 years of age soon learn to use the English language with accuracy. In a remarkably short time they are able to write interesting letters home to parents and friends. At the end of the year the pupils were graded as follows:—

Standard	I.	31
"	II.	20
"	III.	17
"	IV.	16
"	V.	14
"	VI.	7

Fifteen girls are taking music lessons. The boys are carrying on their band practice. All of them are fond of music and are making progress. Both boys and girls have access to papers, magazines and books. We keep before us the fact that these boys and girls have a life to live as well as a living to make.

Farm and Garden.—The crops of last year turned out well. There was an immense crop of apples. For four months apples were on the table of the pupils three times each day. We had all the apples that we could use till the beginning of April. There were produced on the farm 30 tons of grain, 700 sacks of potatoes, 40 tons of hay, 500 boxes of apples, 1,500 pounds of beans, large quantities of turnips, mangolds, beets, cabbage, cauliflowers, rhubarb, berries, &c. Our herd of 12 cows produced over $700 worth of milk. Everything around the place is looking well this spring, and the prospect of a much better yield than last year is good. More fruit-trees have been set out this spring, and plans for the future have been formulated. Our stock consists of 14 cows, 5 heifers, 2 calves, 7 horses, 1 Jersey bull, besides a number of pigs and hens.

Industries Taught.—The pupils are taught to do all kinds of housework. Everything is kept as clean as it can be made with soap and water. Both boys and girls are taught to cook under the guidance of an experienced teacher. Many of them become quite proficient. The big girls take their turn in the sewing- room, laundry and kitchen. The big boys are taught all kinds of farm work. There is no better place in the world than the farm to develop the powers of a boy. Here he is brought close to nature. He becomes observant, resourceful, and in most cases, efficient. Five of the boys are learning the use of carpenter's tools, under the care of an experienced man. They do well at this kind of work. We use a ton of flour each month. This is turned into bread by the boys. Six boys learn to bake in the course of a year. The bread is excellent. Some of the boys are receiving special instruction in gardening this spring. Everyone having to do with the education of the Indian must be a confirmed optimist, with a love and sympathy for people degraded by heathen practices.

Moral and Religious Training.—There is no part of our work more faithfully and carefully done than this. Every member of the staff has a keen appreciation of the importance of this branch of the education of the Indian child. The moral atmosphere of our school is good. Youth is peculiarly the period to arouse admira-

tion for greatness and goodness, and hatred for littleness and meanness. The International Sunday-school lessons are studied most carefully each week. Here you have the very highest morality inculcated. The great aim and object is to cultivate a good conscience, to secure for him a wise and resolute self-control, and to inspire the desire and ability to co-operate for the common good. An attempt is made to store the minds of the pupils with the gems of the Bible. The commandments are carefully taught. All assemble for prayers both morning and evening, a hymn is sung, passages of scripture are read or recited by the pupils. The teachers gather with the pupils and take an active part in the service, which is simple and impressive. A regular prayer-meeting is held each Thursday evening, which everyone connected with the school attends. Sunday at 9.30 a.m. there is a session of school to study the prescribed Sunday-school lesson; at 2 o'clock all go to the Indian church on the reserve one-half a mile away; and at 7 o'clock a regular service is held in the school-room. An effort is made to make Sunday the most delightful day of the week. We are pleased to state that some of our pupils develop strong Christian characters. Reports of those who have been away from the school for years encourage us to toil on. We realize that wonderful possibilities are in each pupil committed to our care. It requires divine wisdom to develop these lives, so that usefulness and happiness may be their lot.

Health and Sanitation.—Last October we had 25 cases of measles. There were no deaths, but it seemed to leave the pupils in a run-down condition. A number of them had to be sent home to recuperate. They are all doing well. In July one girl was taken home by her father and in August she died. Her trouble began in the glands of her neck. This developed into lung trouble. One of the finest boys of the school went home for a holiday and was drowned at the mouth of the Skeena river. These were the only deaths during the year. The health of the pupils in the school now is good. Great care has been exercised in connection with the health of the pupils. The doctor visits the school the first Thursday of each month, and any pupil showing any indisposition is examined and treated at once. Every possible care in regard to ventilation is exercised. Good food, wholesome and well-cooked, is provided. I think the weak point in our industrial schools is the dormitories. The windows of our dormitories are open every night the year round. On the side from which the wind is blowing they are closed, but when there is no wind, all windows are dropped from the top. Every Monday morning, all drains are examined, disinfected and flushed. Yards and everything around the building are kept scrupulously clean.

Water Supply.—There is an abundant supply of excellent water. The Elk Creek Water Company has extended its system in front of the school premises. This gives a never failing supply of water the whole year.

Fire Protection.—This is afforded by the following conditions:—a brick building, the furnaces in the basement, and the stove in the laundry, on cement floors, the baking is done in a brick oven, the building being detached from the main building. There is a good supply of water on the first and second floors, from the taps; water is kept in barrels and buckets in the halls on the third floor; a well, furnished with a force-pump; a supply of water buckets and fireman's axes, kept at easily accessible points, and a fire company organized and drilled with a view to meeting an emergency. Older pupils are appointed to the care of different dormitories. In cases of fire these bigger pupils care for the smaller ones. The building is provided with fire-escapes from the dormitories. Fire-drills are held at intervals.

Heating and Lighting.—The building is heated throughout by the Smead-Dowd system of hot-air furnaces, two of which are in use. The building is lighted by acetylene gas, which is a very satisfactory light.

Recreation.—Both boys and girls are fond of play. They run, jump, skip, play football, baseball, and all games common among pupils of a school. To get pupils to enter heartily into some game is a tonic to the system. Saturday afternoon is

given over to play. The girls go to the woods accompanied by teachers, and have delightful times. The boys have an occasional match of football. The pupils are taught the value of an abundance of fresh air, and deep breathing exercises are carried on. In this way the lung capacity is very materially increased.

General Remarks.—It requires tact and patience to deal successfully with the parents of the pupils. One source of annoyance and friction is the question of holidays. You never can be sure that they will come back voluntarily. The pupils would come back if the parents would leave them alone. There is a gradual improvement in the status of the Indian. He is coming to appreciate the work of the school.

In closing this brief report, I wish to express my appreciation of the uniform kindness and courtesy which I received from the officials of the Indian Department.

I have, &c.,

R. H. CAIRNS,

Principal.

British Columbia,

Kamloops Industrial School,

Kamloops, April 9 1908.

Frank Pedley, Esq.,

Deputy Superintendent General of Indian Affairs,

Ottawa.

Sir.—I have the honour to submit my annual report for the fiscal year ended March 31, 1908.

Location.—The Kamloops industrial school is situated at the foot of St. Paul's mountain, on the northern bank of the South Thompson river. It is in the immediate vicinity of the Kamloops reserve, and about two miles from the town of Kamloops, which is on the other side of the river and is a divisional point of the Canadian Pacific railway.

Land.—Three hundred and twenty acres of land were surrendered by the Indians of the Kamloops reserve for the purposes of the industrial school, but in reality less than two hundred acres belong to the school, for a public road cuts the school reserve in two parts, and the land situated north of the road has been lately fenced in by the Indians as a part of their reserve. Of the 200 acres left, about 40 could be cultivated; but owing to the difficulty of obtaining water for irrigation, only 15 acres are laid out in fields, garden and orchard. The remainder consists of sandy hills and broken land suitable only for grazing, and of low-lying land which in the spring is transformed by the overflow of the river into a beautiful sheet of water. There is no natural grass to be cut for hay, nor is there any timber available for fuel.

Buildings.—The main building contains on the ground floor the parlour, office, dining-room for the boys, kitchen, pantry and the laundry, with four bath-rooms and bake oven. The second storey comprises the chapel and dormitory for the little girls. To the right is the girls' house, containing sewing and recreation room, dining-rooms for the teachers and girls, and dormitories. To the north about 100 feet from the main building, is the boys' home, which contains store-rooms, recreation-room, lavatory and dormitory. There are also two rooms for the accommodation of the principal and the trade instructor. The boys' and girls' school-rooms are two separate buildings, only one storey high and distant 50 feet from their respective homes.

The outbuildings consist of the carpenter and shoe shops, two stables and barn, two cellars, hen-house, ice-house, three-room cottage, girls' summer-house and tank tower.

New and commodious privies, 18 feet long, have been constructed this year for the girls; the vault is in concrete and has two large ventilators.

Some of the buildings need repainting; the floor of the laundry is nearly worn out. The bake oven was rebuilt last fall.

Accommodation.—There is sufficient accommodation for 60 pupils and the necessary staff.

Attendance.—During the year 28 boys and 34 girls were on the roll; 1 girl died in September and 4 boys were temporarily discharged owing to sickness; the average attendance was 57; 4 boys and 5 girls were regularly discharged in July; 2 boys and 7 girls were admitted.

Class-room Work.—The school hours for the boys were in the morning from a quarter to nine till twelve o'clock, every week-day, except Saturday; and in the afternoon of every week-day, from a quarter to five till a quarter past six. The school hours for the girls were from two to five in the afternoon, with half an hour's study in the evening.

The teachers are efficient and painstaking, and though the progress was somewhat retarded by the epidemic of measles which afflicted the school in August and September, the pupils made up the loss of time by a more diligent application to their studies. The boys particularly gave almost perfect satisfaction.

At this date, the pupils are graded as follows :—

	Pupils.
Standard I.	12
" II.	10
" III.	4
" IV.	18
" V.	8
" VI.	6
Total.	58

Farm and Garden.—The produce of the garden for the past year was very good and sufficient for the needs of the institution. Twenty-three tons of potatoes, about 10 tons of mangolds and sugar beets, 4 tons of carrots, 1,100 lbs. of dry beans, 250 lbs. of peas, besides onions, cabbages, green beans, corn, lettuce and tomatoes were the products raised on nearly four acres of land which has been cultivated for twelve years. Raspberries, currants and gooseberries were plentiful last summer.

Many of the old fruit-trees were winter-killed in 1907, and will have to be replaced this spring. The young trees planted in 1906 did not suffer so much; only seven were winter-killed.

The hay crop was sufficient for the few animals belonging to the institution. Two acres of the old alfalfa field were ploughed up last spring, resowed with oats and alfalfa, and irrigated by means of the windmill supplied by the department; the crop was very good. The rest of the field yielded but very light crops.

All the boys work in the fields and garden; they milk the cows and attend to the stable work in turn, outside of the regular work hours, which are from one to four o'clock, p.m.

Our stock consists of four horses, six cows, five calves and one bull. We have now only forty fowls, nineteen were killed this winter by coyotes.

Industries Taught.—*Carpentering.*—Twelve boys received more or less instruction in this trade; they built only the new water-closets and made the repairs needed about the buildings and fences.

Shoemaking.—Four boys were employed at times in the shoeshop; their work consists in repairing shoes and harness.

Baking.—Seven boys were employed in turn in doing the heavier part of this work, and the girls did the rest. They have always succeeded in turning out first-class bread.

The boys are also employed at all kinds of practical work about the premises, such as laying water pipes, building stone and concrete walls, levelling and beautifying grounds, planting shade and ornamental trees and shrubs.

Girls' Work.—The girls do the cooking and washing, and are taught all the branches of housekeeping. Besides the help they give for the general baking, they are made to go through the whole process of making bread on a small scale in the kitchen stove oven. They are taught hand and machine sewing, knitting, mending and darning. They make all their dresses and other articles of clothing for their own use, and also shirts, drawers and socks for the boys. The girls as a rule are tidy and industrious; great credit is due to the Sisters of St. Ann, who have them in charge.

Moral and Religious Training.—The pupils are often reminded of the object which the government has in view in carrying on the industrial schools, which is to civilize the Indians and to make them good, useful and law-abiding members of society. A continuous supervision is exercised over them, and no infraction of the rules of morality and good manners is left without due correction. The most efficacious means to promote the moral conduct of the children is to ground them well in the truths and practices of the Christian religion. With this end in view, the pupils devote a certain time of each day, usually before breakfast, to the memorizing of the catechism of Christian doctrine, and explanations are given almost daily to the girls from eleven to half-past eleven a.m., and to the boys from one to half-past one p.m. Morning and evening prayers are said in common. On Sunday, the pupils assemble three times in the chapel, and besides, one hour is devoted to the learning of sacred hymns and to the explanation of the Gospel.

Health and Sanitation.—The general health of the pupils has been good; but the school suffered, in the months of August and September, from an epidemic of measles which was prevalent in the district during the latter part of the year. There were thirty-six cases, some of which were of a very severe type. At first, upon the advice of the medical officer, the sick pupils were isolated, but afterwards it was impossible to do so. One little girl died owing to complications, and four boys had to be sent home to recruit if possible. One boy sprained his foot and was laid up for one month; one girl accidentally drove a needle into her hand and an operation was found necessary. There was a very serious case of pneumonia in March, but the boy has fully recovered. At the end of the year, the pupils enjoy good health.

The sanitary condition is very good. The water from the kitchen, laundry and bath-rooms is carried to the river by an underground drain. Garbage and refuse matter are not allowed around the buildings; disinfectants are used in the laundry and closets. Ventilation is carefully attended to, and the pupils are often reminded of the importance of securing a constant supply of pure and fresh air.

Water Supply.—Good water is obtained from the river by means of a bull-dozer pump and gasolene engine. The tank in which it is kept is lined inside with galvanized iron and covered all around with sawdust. The winter was very mild and we had no trouble this year wth the water-works.

Fire Protection.—The fire-appliances on hand are as follows: three Carr chemical fire-engines and four Eclipse dry dust extinguishers; two fireman's axes; three heavy ladders permanently attached to the buildings and some smaller ones; about two dozen buckets; one large stair outside of the boys' dormitory for fire escape; two tanks, one of a capacity of 1,800 gallons with three taps, and the other of a capacity of 1,200 gallons, placed on a tower 30 feet high. These tanks can be filled in less than an hour's time by means of a bull-dozer pump which is operated with a three horse-power gasoline engine. There are 100 feet of rubber hose which can be attached to any of the three hydrants placed at convenient points, so that a stream of water may be directed to any part of the main buildings.

Heating and Lighting.—Ordinary box stoves are used for the purpose of heating, and all the fire wood has to be purchased and brought down the river from Shuswap,

distant 30 miles from Kamloops. Coal oil is the means of lighting, but tallow candles are used when it is necessary to move the light from one room to another.

Recreation.—The pupils have half an hour of recreation after breakfast, half an hour after dinner, and in the evening from half-past six till bed-time. On Sundays and holidays they enjoy a quiet walk in the afternoon. They indulge in the ordinary amusements suitable to their age and sex. Some are fond of reading; one of their great pastimes is to listen to the gramophone.

General Remarks.—The school suffered a great loss last June by the death of Sister M. Joachim, who presided successfully over the girls' department for twelve years.

Most of the boys who have left the school prefer to marry girls trained in the same institution; since my last report, two more couples of ex-pupils have been united in the bonds of holy wedlock.

In closing, I beg to tender my sincere thanks to the department for having supplied us with maps and blackboards for the new school-room, and to Mr. A. Irwin, agent, for his kindness and promptitude in attending to matters connected with the institution. The visits of Mr. Green, inspector of schools, are very much appreciated.

I have, &c.,

ALPH. M. CARION, O.M.I.,

Principal

BRITISH COLUMBIA,

KOOTENAY INDUSTRIAL SCHOOL,

ST. EUGENE P.O., March 31, 1908.

FRANK PEDLEY, Esq.,

Deputy Supt. General of Indian Affairs,

Ottawa.

SIR,—I have the honour to submit the annual report of the above-named industrial school, for the fiscal year ended March 31, 1908.

Location.—This institution is favoured with a delightful location near the Indian village of St. Eugene, which adjoins St. Mary's reserve. It is in close communication with the railway system, being about 5 miles distant from Cranbrook, the nearest station. The extent of the premises, the beautiful gardens and spacious playgrounds, offer favourable opportunities for healthy recreation and exercise. A splendid view of the surrounding mountains can be had from the buildings.

Land.—The area of land belonging to the school and immediately surrounding it consists of 33 acres, surrendered to the department by the Oblate Fathers for school purposes. A part of this land is occupied by the buildings and playgrounds, the remainder is laid out in gardens and orchards. One hundred and twenty acres have also been rented by the Sisters of Charity, in order that the boys might receive a more thorough training in farming, as that is the occupation to which most of them turn. The soil is not very fertile, but with a proper amount of irrigation, excellent crops of hay, oats and vegetables are raised each year.

Buildings.—Three separate frame buildings are used for school purposes. The main building is occupied by the staff and contains parlour, office, dining-rooms, kitchen, pantry, bed-rooms and chapel. The girls' and boys' houses to the right and left of the main building, are of the same size and laid out in a similar manner. Each has on the first floor, school-room, recreation-rooms, refectory, wardrobes, bath and toilet-rooms. The second floor is occupied by the dormitories. The outbuildings are: bakery, laundry, supply store, foreman's house, shoe-shop, wood-shed and stables.

Attendance.—The government grant is for 50 pupils, but this number has always been exceeded in our school. The attendance is very regular, the children being boarders. During the past term the average on the roll was 70.

Class-room Work.—The course of studies outlined by the department is followed as closely as possible. The pupils have 4 hours of class-room work, including one hour for study. With few exceptions, the pupils show a great desire to learn, and splendid progress was made. Regular lessons were given in singing, calisthenics and band music. The boys practised one hour each day.

At the close of the term the pupils were classified as follows:—

	Pupils.
Standard I	30
" II	6
" III	19
" IV	9
" V	5
" VI	1
Total	70

Farm and Garden.—The farm is in a flourishing condition. Most of the work is done by the boys under the supervision of the foreman. They evince a special aptitude for all farm work, and as it is the most useful for them, each boy is given a thorough and practical knowledge of farming in all its branches.

Girl's Industrial Work.—The girls attain great proficiency in the use of the needle and sewing-machine. They are first taught plain sewing, darning and knitting, after which they are taught to cut, fit and make their own dresses. They also receive a thorough training in other branches of domestic work, such as baking, cooking, dairying, and laundrying.

Moral and Religious Training.—The religious part of the education of the pupils, is attended to with the greatest care and vigilance. The conduct of the children throughout the year has been all that could be desired.

Health and Sanitation.—The sanitary condition is good, and the health of the pupils has been fairly good during the year.

Fire Protection.—Chemical fire-extinguishers, buckets, ladders and axes are stationed at convenient places throughout the buildings. There are 2 stand pipes, connected with the main pipe, to which a hose can be attached in case of fire.

Heating and Lighting.—The houses are heated by several stoves. The lighting is done by means of coal-oil lamps.

Recreation.—Regular hours are set aside for recreation each day. This consists of games, calisthenic exercises, walking or playing. Exercise in the open air is greatly encouraged.

General Remarks.—Before closing I beg leave to express my feelings of gratitude to Mr. A. W. Vowell, superintendent, for his kind attention to all matters connected with the school; to Mr. Green, inspector of Indian schools, who takes a keen interest in our institution, to Mr. Galbraith, our agent, who is so prompt in his correspondence, and whose cheerful visits never fail to bring us a sunny day.

I have, &c.,

JAS. WAGNER,

Principal.

British Columbia,
Kuper Island Industrial School,
Kuper Island, April 1, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit my annual report of the Kuper Island industrial school for the year ended March 31, 1908.

Location.—This school is situated on Telegraph bay, on the southwest side of Kuper island, about 5 miles from Chemainus station, on Vancouver island. The scenery of the bay, sheltered on three sides by dense forests, widening southward into Stuart channel, with a blue mountain range for background, is truly magnificent. The climate is no less ideal for a school location.

Land.—The land in connection with the school was surrendered by the Penelakut Indians and forms part of the Kuper island reserve. It extends over an almost square area of 70 acres, one-half of it being under cultivation. The soil is good and suitable for mixed farming.

Buildings.—The buildings, 20 in number, are scattered in a very disorderly way at the southern corner of the school property, some along the low water front, others on the hill. This profusion and irregularity of small buildings on different levels causes great inconvenience and discomfort to pupils and staff.

Most of the buildings are old and damaged beyond repair in several parts by weather and long use.

The main group of buildings, 4 in number, on different levels, comprises, on the ground floor, parlour, office, boys' dining-room, kitchen, girls' dining-room, recreation-room, parlour for matron, store-room and sewing-room. On the upper floor are 2 bed-rooms, girls' class-room, girls' and sisters' dormitories, with linen and bath-rooms adjoining.

The boys' home is divided on the ground floor as follows: boys' infirmary, a guest-room, store-room, bath-room and lavatory, play-hall, school-room. On the upper floor are the linen-room, dormitory and bed-rooms for teacher and foreman.

The outbuildings consist of a cottage for the foreman, now used to accommodate visiting Indians, a gymnasium, laundry and dry-room, bakery, barns, hen-house, boat-house, shops for carpenter, shoemaker and blacksmith, wood-shed, house for hydraulic ram and elevated tank.

Accommodation.—The institution can accommodate 80 pupils and actually does. The shops and rooms have been furnished and organized so as to afford efficient education and manual training for 80 children. A larger number ask to share the same benefit.

Attendance.—During the year 90 different pupils were on the roll; 88 pupils actually attended the school. The average attendance was 75. Six pupils were discharged with the consent of Superintendent Vowell, and 22 pupils were admitted. One little girl died at her parents' home from heart trouble, 50 pupils only are allowed the per capita grant.

Class-room Work.—The school hours were from 8.45 to 12 noon, in the afternoon from 5 to 5.45 with one hour for study at night for the boys, and study from 4 to 4.45 p.m., for the girls.

The work, although excessive for only one teacher in each class-room, has been very successful.

At the end of the year the pupils were graded as follows:—

	Pupils.
Standard I.	21
" II.	13
" III.	11
" IV.	11
" V.	10
" VI.	11

Farm and Garden.—All the boys receive practical instruction in farming and gardening. Six of the older boys receive a special training. The crops were fairly good last year.

Our live stock consists of 3 horses, 11 cows, 1 bull, 2 heifers, 2 calves, 8 pigs and about 100 fowls

Boys' Industrial Work.—*Carpentry.*—Six boys received instruction this year. The making of a new hen-house and chicken-yard, the changing of two buildings, one into a chapel, the other into a gymnasium, besides the incessant repairing of old buildings, kept the foreman and apprentices very busy.

Shoemaking—Six boys learned the trade with Mr. Borde, who resigned the position in June. All the repairing has been attended to since by the boys under the supervision of the assistant instructor.

Painting.—This was done by the carpenters.

Baking.—The baking is done to-day by an ex-pupil. Two boys are trained in the work and all the other boys in turn prepare the dough.

Dairying.—Two boys have charge of this department. They operate the cream separator, do the churning and make excellent butter. The milking is done by the boys. All the boys are taught how to take care of the cattle.

Laundrying.—This work is done by both boys and girls under superintendence of the matron.

Girls' Industrial Work.—The girls receive instruction in all kinds of general housework, such as cooking, baking bread and pastry, washing, &c. They show great skill in hand and machine sewing, cutting and finishing dresses. They deserve special praise for their crochet and fancy work. They are also taught the art of cultivating flowers.

Moral and Religious Training.—Religious instruction is given daily to all the pupils during half an hour; their morning and evening prayers are said in common. The conduct and spirit of the children was excellent.

Health and Sanitation.—The health of the children was very good. One boy showing symptoms of consumption was sent home; a little girl, by imprudence of the parents, developed serious heart trouble and died at home. The sanitary condition of the buildings—as good as such old structures allow—is wanting in many respects. Ventilation and sewerage have been provided for, as well as could be done under the present circumstances.

Water Supply.—A creek supplies the institution with plenty of water, which is conveyed to the different buildings by an hydraulic ram. Some natural springs provide fresh and pure water for drinking.

Fire Protection.—The pupils are regularly trained in the way of escaping from the different rooms in case of fire and in the way of fighting an incipient fire. Triangles to sound the alarm, ladders, water-buckets and chemical fire-extinguishers are always ready at hand for any case of emergency.

Heating and Lighting.—The heating is done with ordinary box-stoves and heaters, but, owing to the number and location of so many separate buildings, is not very satisfactory. The light is supplied by an acetylene plant, and all the rooms are well lighted.

Recreation.—The boys are very fond of all the national games and enjoy in turn basket-ball, football, baseball, &c. Boating and swimming are their principal amusements in summer. Our brass band, under the leadership of an ex-pupil, is

progressing rapidly and promises to attain to high honours. The girls amuse themselves by swimming, skipping, playing ball and other games. They enjoy boating and bathing in summer

General Remarks.—The Very Rev. Father Donckele, who for 17 years as principal of the school, devoted himself to the welfare of the Indian children, died May 30, 1907. According to his wish, his burial took place at Kuper island. An immense crowd of Indians and whites of all denominations came to testify to their grief and veneration for the departed.

A proof that the industrial school has become very popular among the Indians of the district, is the fact that many parents, who once were reluctant, now are very anxious to have their children educated at our school, and many Roman Catholic children had to be turned away, or delayed, for want of space and sufficient grant.

In closing my report, I wish to thank the officers of the department for their courtesy.

I have, &c.,

P. CLAESSEN,

Principal.

BRITISH COLUMBIA,
LYTTON (ST. GEORGE'S) INDUSTRIAL SCHOOL,
LYTTON, April 7, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit the annual report of the above named industrial school, for the fiscal year ended March 31, 1908.

Location.—The school is 2½ miles from Lytton, north, on the left bank of the Fraser river, and close to the Lytton-Lillooet wagon road.

Land.—The land comprises some 600 acres, and is sandy, sandy loam, and a little alkali. This last we are working by ploughing in coarse horse manure and straw after thoroughly draining, and have led off the springs along the side hill by ditches which are open, and have got, this spring, by this means an additional 3 inches of water for irrigation. There is some excellent land to the north, which we are bringing in, and by turning a small stream shall be able to make it productive. It lies with a gentle slope to the south. We broke up 3 acres of it last summer and sowed melon seed, and set out peppers and tomatoes, and these did well.

The land is owned by the New England Company.

Buildings.—The school building is in good repair, and we have made a good many improvements, and are still at work. We have just about finished the new laundry and have built a stone root cellar, and on this a carpenter shop. Last year we also began a new stable for our horses, stone up to 4 feet and frame on top with a loft for hay. This we hope to complete shortly. We built also a chapel of stone 60 x 27 feet, at a cost of $6,000. We have besides these, a farmhouse, 3 barns, dairy, granary, implement-shed, blacksmith-shop, poultry-houses and pig sties.

Accommodation.—The school was built for the accommodation of 35 pupils and a staff of 4, but by improvements made we could take in more now.

The old class-room we have turned into a room for the matron, and a hat and cloak-room into a porch and bath-room, and we use the old chapel for a class-room. There is also the room below which was used as a carpenter's shop, which we had painted and made into an pleasant airy room.

Attendance.—Thirty-five are on the register, one sick in Lytton hospital, one sick at home, 2 absconded, one of whom we hope to have in a day or two.

Class-room Work.—School hours are from 9 a.m. to noon, and from 7.30 to 8.30 in the evening. We give a half holiday on Saturday.

The supbjects taught are reading, writing, arithmetic, singing, grammar, history, and geography. I have been able to give the boys also in the evenings, simple lectures on different subjects, which they have much appreciated and from which they have profited, as I can tell from their short essays which they write when they have completed their copy-book instruction.

Farm and Garden.—The farm still grows and seeding is just about completed. We shall have 50 acres in grain and about 10 in roots, the remainder being hay. We shall not do quite as much gardening as last year, when we shipped a carload of water melons, besides musks and tomatoes, and fruits. The profits which we make do not warrant the expenditure of the necessary attention; the profits going mostly to the middlemen and freighters.

Industries Taught.—Having such a large farm and requiring so many buildings, our carpentry industry has been extensive, and our blacksmith work, though casual, gives the boys a fair amount of practice.

Our farming and gardening are done as nearly as possible according to latest methods.

All the house-cleaning is done by the boys and for the past 12 months, owing to the exhorbitant demands of the Chinese, mixed with much impertinence, we have had to do a great deal of laundry and kitchen work.

Moral and Religious Training.—Everything possible is done to instil into these children right doing, and I am much pleased with most of them.

They learn their Sunday lessons wonderfully well when once they get into the way of committing to memory, but they say over aloud, like the Chinese, these lessons, and do not seem to be able to learn them without the accompanying noise.

We have of course our morning and evening prayers with Bible reading besides our Sunday services and school.

Health and Sanitation.—The health has been good. The building is sanitary. We have just taken up the old cedar sewer pipe and put in tile.

Water Supply.—Water is supplied by gravitation from a small stream.

Fire Protection.—Two fire-escapes are built to the school; one north, the other south, and a perforated inch and a half pipe runs along the top of the building, and these with hose and buckets and axes complete our fire-protection.

Heating and Lighting.—Heating is by hot-air furnaces, ligthing by coal-oil angle lamps.

Recreation.—We have a big country, and to roam over it is thoroughly enjoyed by the boys. The slope of the land makes good coasting.

All spare time is passed out of doors at play, and, as we have very little rain we are not kept in often. In winter the boys enjoyed sleighing, and this past winter we had good ice in three places on the farm, from the sudden thaws followed by frosts. The country being hilly and sloping to the river gives a long sleigh run.

I have, &c.,

GEO. DITCHAN,

Principal.

British Columbia,
Metlakatla Industrial School,
Metlakatla, May 2, 1908.

Frank Pedley, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

Sir,—I have the honour to submit this report for the year ended March 31, 1908.

Location.—The school is situated at Metlakatla, on the west side of the Tsimpsean peninsula, about 5 miles from Prince Rupert. The outlook from the buildings is wide and pleasant.

Land.—The school has 6 acres of land, which has a sunny aspect. Snow, even in this high latitude, very seldom lies on the ground for a week at a time.

Buildings.—These consist of the main building of the boys' division, an old frame building, with fair accommodation for 25 pupils and staff. Also a similar building, but comparatively new, with good accommodation for 25 girls, the matron and her assistants. There is also a building containing the workshop, and another which was used for class instruction.

Accommodation.—The accommodation in the girls' division was good, in the boys' fair.

Attendance.—In the early part of the year there were 28 boys and 20 girls in attendance, but on the reassembling of the school, after the salmon fishing and summer holidays, there was an outbreak of measles which prevented many of the pupils from returning. The boys' school opened with only 13 pupils in attendance, and the management decided not to incur, for the time being, the responsibility of reopening the girls' branch.

Class-room Work.—During the early part of the year the principal taught the boys, and the matron, Miss Jackson, the girls. After the outbreak of measles the attendance was so small that the village children and industrial school boys were taught together by Miss M. A. Johnson, assisted by Miss Sarah Legaic. Fair progress was made.

Garden.—About three-fourths of an acre was used as a garden. The yield of fruit and vegetables was good.

Industries Taught.—Mr. James H. McGregor, a good carpenter and shoemaker, was instructor from April 1 to October 23. In the early part of the year 13 pupils received instruction in carpentry and painting. They were employed chiefly in painting the Ridley Home, an institution for the education and care of white and half-breed children, also erecting fences and gardening. Mr. McGregor was offered a higher salary in Victoria than the school could afford to give, and therefore resigned and left. The income of the school, through the reduced attendance, being very small and inadequate to its maintenance, it was considered unadvisable to increase the cost by appointing another instructor.

Moral and Religious Training.—Religious instruction was given in the day school and Sunday school, and the pupils were regular in their attendance at the services in the village church.

Health and Sanitation.—All the pupils recovered from the attack of measles, and their health throughout the year was fairly good.

General Remarks.—Before closing this report, which is probably the last which I shall write in connection with this school, I wish particularly to thank the Rev. J. H. Keen for the pleasure which he frequently afforded my pupils, by giving, during the winter months, short lectures on interesting subjects, illustrated by a magic lantern,

and for the warm interest which he took in the well-being of the institution; also Miss West, for her long continued and kind superintendence of the Sunday school.

I have, &c.,

JNO. R. SCOTT,

Principal.

BRITISH COLUMBIA,
WILLIAMS LAKE INDUSTRIAL SCHOOL,
WILLIAMS LAKE P. O., April 6, 1908.

FRANK PEDLEY, ESQ.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to submit my annual report for the year ended March 31, 1908.

Location.—This institution is beautifully situated in a fertile valley along the San Jose creek, 135 miles from Ashcroft, a station on the Canadian Pacific railway and four miles from Sugar Cane, the nearest Indian reserve.

Land.—All the land in connection with the school is the property of the corporation of the Oblates of Mary Immaculate. It is for the greater part only pasture land.

Buildings.—These consist of the main building, the boys' and the girls' homes and a fourth building containing kitchen and dining-rooms. The main building is occupied by the reverend principal and the other Fathers. The boys' home comprises on the lower floor: school-room, parlour, play-room and lavatory; on the second floor: dormitory, store-room, sick-room, bed-room for the foreman; in the attic are located the boys' wardrobes.

The girls' home has on the lower floor: a school-room, a store-room, two parlours, a lavatory, a sewing and a play-room; the upper floor contains a dormitory, a bed-room, chapel, bed-rooms for the staff and a second dormitory; in the attic are the girls' wardrobes and another store-room.

The outbuildings are: meat-house, granary, harness and blacksmith shops, 3 cellars, hen-house, stable, barn and machine-shed. A new stable is being built that is considered the best and most substantial one in the neighbourhood. Its dimensions are: 70 x 40 x 36 feet, and it will provide accommodation for over 32 horses and a large quantity of hay.

Accommodation.—The school can easily accommodate 90 pupils with the necessary staff.

Attendance.—At the time of writing this report 68 pupils are in attendance; 59 of these are on the roll. Since July, 9 were admitted but not yet formally enrolled. Six pupils were discharged: 2 boys and 4 girls.

Class-room Work.—The school hours for the boys are in the forenoon from 8.30 to 10, every week day, and in the afternoon from 4 to 5.15, except Saturday. The school hours for the girls are in the forenoon from 10 to 12, every week day, except Monday forenoon, and in the afternoon from 4.15 to 6, except Saturday. The subjects taught are those prescribed by the department. Satisfactory progress was made by all and even excellent progress by a certain number and these were, generally speaking, the newcomers, who learn English in a very short time to the astonishment of all. The pupils are graded as follows:—

Standard I.	9	pupils.
" II.	14	"
" III.	21	"
" IV.	9	"
" V.	9	"
" VI.	6	"
	68	

Farm and Garden.—Again I am obliged to make the same remark as in my former reports: wheat was partly frozen and the garden was infected with a plague of cut-worms. However, the crops in the garden were more than sufficient for the wants of the institution.

Industries Taught: *Farming.*—Farming being in this part of the province the best and most lucrative occupation for the Indians, we try to give our boys a thorough and practical knowledge of this branch. Nearly all the senior boys attend regularly to all the work in the garden, while occasionally even all were employed there. At haying-time all spent the afternoons in the meadows. During winter they saw and split all the fire-wood.

Carpentry.—Two boys were constantly under the direction of a competent instructor. They assisted him in erecting the new stable mentioned above. Last year fire destroyed the carpenter's shop and hence all carpentry work had to be suspended during the winter. The former instructor having resigned, we were very fortunate in securing this spring the valuable services of a most able carpenter. Mr. J. J. Swain comes to us with a long record of good work done at the Clayoquot industrial school.

Blacksmithing.—Whenever any light work is to be done, the carpenter and his apprentices work also in the blacksmith-shop.

Shoemaking.—In the absence of a competent shoemaker, work in this shop is limited to half-soling and mending, which is neatly done by one of the boys.

Dairying.—Six boys attended to the separator each day at noon and in the evening. They also did the churning, while the girls attended to the lighter work of butter-making. Over 900 lbs. of butter were put up.

Girls' Industrial Work.—The girls attain great proficiency in housekeeping; in knitting, mending, hand and machine sewing, dressmaking, crocheting, embroidery and lace-making. Except their underwear for winter, they made all their own clothing and the greater part of the boys' suits. Under the direction of a Sister, they in turn attend also to the laundrying, to the cooking, baking, butter and cheese-making. The aim ever kept in mind is to prepare each girl to become an all-round practical housekeeper. How well the good Sisters succeed in this is shown by the many letters I receive from white people asking for girls to help them in the house; also that the Indians are very anxious to send their girls to school so that they may learn well, cooking, knitting and mending.

Moral and Religious Training.—This being the most important part of education particular care is taken by all members of the staff in training the children to be obedient, truthful, honest, kind and obliging. Religious instruction is given daily by the principal, morning and evening prayers are said in common, and on Sundays and holy days the children do all the singing in the church, often in 2 and 3, sometimes even in 4 parts.

Health and Sanitation.—The children of this school are exceptionally healthy and look well, so says Mr. A. E. Green, the inspector. Very seldom are any of them troubled by even minor ailments, such as, sore eyes, etc., so frequent in other schools. We have, however, to deplore this year the death of 3 girls; 2 of these died at home and one at the school. The latter died of tuberculosis and one of the 2 others of heart disease. The drainage is good and cleanliness strictly enforced.

Water Supply.—Our water-works are now in good working order, so that we have our reservoir always full of fresh water, though at certain seasons of the year it is not very clean.

Fire Protection.—All fire-fighting appliances are always kept ready at hand. Fixed ladders are laid on all the roofs; the chimneys are made of terra-cotta pipes, boxed in about 2 inches of cement and frequently cleaned. There is also a good supply of pails.

Heating and Lighting.—The heating is still by ordinary box stoves, but it is very unsatisfactory and a few furnaces should be installed. All the buildings are now lighted by acetylene gas, which has proved very satisfactory.

Recreation.—Boys and girls have large and well-kept playgrounds, where they enjoy all kinds of outside games, nearly the whole year, as it is mostly dry. The girls have one part of their playground fenced off, where each has her own flower garden.

General Remarks.—All the ex-pupils, with very few exceptions, continue to be a credit to the school.

In concluding, it gives me great pleasure to mention here the painstaking zeal of all my staff in performing the duties they have undertaken, which at times are very trying. My thanks are also due to Superintendent A. W. Vowell, to our worthy agent, Mr. E. Bell, and our inspector, Mr. A. E. Green.

I have, &c.,

H. BOENING,

Principal.

BRITISH COLUMBIA INSPECTORATE,
1076 PENDER STREET, VANCOUVER, April 6, 1908.

FRANK PEDLEY, Esq.,
Deputy Supt. General of Indian Affairs,
Ottawa.

SIR,—I have the honour to transmit a report on the schools inspected by me from April 1, 1907, to March 31, 1908.

WEST COAST AGENCY.

CLAYOQUOT INDUSTRIAL SCHOOL (ROMAN CATHOLIC).

I inspected this school in April and again in August, 1907. The staff at that time consisted of the following: Rev. P. Maurus, O.S.B., principal and teacher; Mr. Geo. Sturmer, instructor, Sister Mary Xavier, teacher and matron; Sister Mary Clara, cook; Sister Mary Clothilde, seamstress; Sister Mary Elizabeth, laundress.

Sister Mary Placide, who has been a successful teacher, left during the year on account of illness and was replaced by Sister Mary Xavier, who also holds a Normal certificate.

There were 28 boys and 32 girls enrolled, making a total of 60; of whom 55 were present at inspection.

The pupils were graded as follows :—

	Boys.	Girls.	Total.
Standard I.	7	3	10
" II.	5	6	11
" III.	4	10	14
" IV.	4	7	11
" V.	7	4	11
" VI.	1	4	5
	28	34	62

Two of these boys had been discharged, leaving 60 enrolled. In reading the juniors did very well, the new-comers having made good progress. The senior classes have made good progress since last inspection, and their answers to my questions proved that they thoroughly understood their lessons and could give an intelligent account of what they had read. They showed also an improvement in enunciation, reading in a clear and distinct voice.

Pupils of both grades are good at spelling, even of difficult words. Their writing is excellent, while the arithmetic was good and geography fairly good. In Canadian history they did very well. It is encouraging to see how the little ones are getting along in arithmetic, as this is often a difficult subject for Indian children.

The class-rooms are well furnished with desks, blackboards and all school material, and the books and slates are kept in good condition. The senior class-room is an ideal one, large, bright, well ventilated, and has recently been finished in the natural grain of the wood, presenting a fine appearance.

The school land of 175 acres is heavily timbered. The gardens, comprising from 2 to 3 acres, at the time of my visit, looked better than any I have seen on the west coast.

The potato crop is splendid, though limited in area. It shows, however, that with proper treatment and use of fertilizers this land can be made productive, and the work of the school in this line sets a model to the Indians, and, as an incentive as well, to betake themselves to gardening.

The live stock consists of 6 milch cows, 1 bull, 1 calf, 2 heifers. The accommodation while temporary is sufficient for the present. All the stock is in splendid condition. There are also about 100 fowls.

The girls learn baking, cooking, general housework, darning, mending, dress-making, cutting and fitting, hemming, lace-making, crocheting and embroidery. I saw them at their work and was pleased with the neat way in which they did it.

The water is pure and abundant, and the drainage good. Ventilation is good in all the rooms; the ceilings are high and the windows large.

Protection against fire is good. There is good water pressure and plenty of it. There are enough buckets and extinguishers on hand, well distributed, and plenty of fire-hose. I gave the fire-alarm once when the children were at supper in the dining-room and a second time, when they were in the dormitories, and all left quickly and orderly. Rewards are given for good conduct, for excellency in class and at trades.

Ex-pupils, for the most part, work in the Clayoquot saw-mill. They are well-liked by their employers and receive from $2 to $2.25 per day. Others are at present on sealing schooners.

I inspected every part of the building from basement to dormitory, and found everything neat and tidy, and in its place. The hot-water heating plant gives great satisfaction. The management of the school is a credit to the energetic principal and staff.

AHOUSAHT BOARDING SCHOOL (PRESBYTERIAN).

This school was inspected on April 9, and again in August, 1907. The staff comprised the following: Rev. J. A. Millar, B.A., principal; Miss J. McNeil, matron; Miss A. J. Millar, assistant matron; and Miss E. C. McKay. Miss Millar, assistant matron for the past year, had resigned, but the position was soon to be filled.

Twenty-three boys and 19 girls were enrolled, making a total of 42. They were graded as follows:—

	Boys.	Girls.	Total.
Standard I.	5	3	8
" II.	1	3	4
" III.	4	1	5
" IV.	9	6	15
	19	13	32

Three pupils were seal-hunting by permission, and 7 were ungraded. I examined the pupils in reading, spelling, arithmetic, geography, and history, in all of which they did well. There was noticeable improvement in English, while the writing was neatly done. School is held both morning and afternoon and the programme laid down by the department is followed as closely as possible. The classrooms are light and excellent; the desks, good and sufficient; while the school equipment is adequate. Everything is clean and neat.

A field of about 16 acres has been recovered by draining a small lake and the soil is excellent for gardening purposes. The entire field has been sown and planted. The pupils take a great interest in the growing crop, where they see for the first time wheat, &c., growing.

The boys have assisted in the sowing, planting and caring for the crop. I consider this a great educative experience for the scholars. There are about 2 acres of potatoes and 2 acres of beans.

The big boys have assisted in the erection of a building for a bake-house and a tank-house, and are becoming quite skilful in carpentry-work. They helped to construct a large tank, lining it with galvanized iron. The boys also repair the shoes.

The boys and girls do the baking in a new, large bake oven, put in during the year. The oven is a No. 1 Hubbard, made by the Warren Manufacturing Co., Toronto, and gives good satisfaction. The girls do most of their own sewing and dressmaking and whatever is necessary for the school.

The water-supply at this school, is for the first time, entirely satisfactory, and the new tank, lined with galvanized iron, has a capacity of 12 tons of water. The well has also been deepened, to ensure an additional supply during the dry season.

The drainage is now excellent. The ventilation is also good. The ceilings are high, and the dormitories so situated that the windows can be kept open through the whole year.

A new, strong, double-acting force-pump and 100 feet of hose, with reducing nozzle, enables the school to utilize their entire water-supply in case of fire, for any part of the building or roof.

A fire-alarm was given during my visit and the children were out of their dormitories and outside the building in half a minute.

A part of the level lake land has been fitted for a school playground. This, in addition to the beach, affords ample opportunity for games.

The staff are doing excellent work and there was a balance on hand of $2.40 at the end of June.

CLAYOQUOT DAY SCHOOL (ROMAN CATHOLIC).

This school was inspected on April 9, and again in August. Rev. C. Moser is the teacher. The children had gone with their parents to an outside village, but the register showed 19 pupils enrolled, with an average attendance of 6. I saw some of the children afterwards and they appeared bright, and could speak a little English.

CLAYOQUOT DAY SCHOOL (METHODIST).

On the following day I visited this school, which is taught by Mrs. M. Barlow. Twenty pupils were enrolled, of whom 2 only were present. The average attendance is 5. The 2 pupils present did fairly well in reading, writing and spelling.

UCLUELET DAY SCHOOL (PRESBYTERIAN).

This school was closed for the summer holidays at the time of my visit. Mrs. Swartout is the teacher. Fifteen pupils were enrolled, with an average attendance of

8. I saw some of the pupils at a cannery. They were especially intelligent and are a credit to their teacher. This school is under the auspices of the Presbyterian Church.

ALBERNI BOARDING SCHOOL (PRESBYTERIAN).

This school, which is adjoining the Tsesaht reserve, I inspected on June 19, 20, 21 and 22, 1907. The staff consisted of Jas. R. Motion, principal; Mrs. H. G. Motion, matron; Miss C. E. Guillod, teacher; Mrs. J. Steven, assistant matron; Miss Lily Haslam, laundress.

During the year Miss Johnston, teacher, resigned, and Miss C. E. Guillod was appointed.

There are 49 children on the roll, 23 boys and 26 girls, of whom 48 were present at inspection, all the boys and 25 girls. They were graded as follows:—

	Boys.	Girls.	Total.
Standard I.	4	10	14
" II.	0	4	4
" III.	6	9	15
" IV.	9	1	10
" V.	3	2	5
" VI.	1	0	1

I heard them read and spell, and questioned them on arithmetic. I saw their writing and drawing. They had improved in reading and English and have made very satisfactory progress since last inspection. They also sing very nicely. The half-day system is followed, the younger boys attending school all day.

There are 156 acres of land mostly bush, but some partly cleared. There are about 5 acres in garden planted chiefly in potatoes; also vegetables and small fruits. There are a few tree fruits. I saw the boys in the garden hoeing and cultivating.

Their live stock consists of 1 horse, 4 cows and 3 heifers. They also keep about 40 hens. The girls care for the milk and butter. The butter, made by the girls, was good.

The boys repair shoes, clear land, fish, mend nets and do ploughing and teaming for the school. The girls are taught housework in all its branches, including bread-making, cooking, laundry and sewing. They are also taught music.

Since the typhoid fever outbreak as reported last year, the health of the pupils has been excellent. The food is good and sufficient and the children are well clothed. There was sufficient water for domestic purposes, but of no use for fire-protection. Drainage and ventilation were good.

There were 4 Keystone fire-extinguishers and 11 fire-buckets. While the girls were in the dormitories a fire alarm was given and the school was emptied in 2 minutes. As before stated, there is no water-supply other than the fire-buckets.

Rewards are given for class-room work. The old detached class-room is clean, and in as good repair as the condition of the building permits, but a new one will soon be needed.

Five ex-pupils are married and have comfortable homes and are earning a competent living. Several boys have been working on a timber survey, receiving $60 per month with board. I met two of these and found them well dressed, intelligent lads. One girl has been in service in Victoria for 8 years, giving good satisfaction to her employers. Nine girls are married and have comfortable homes and one is employed on the staff as laundress.

The dormitories and every part of the school, I found clean and in good order.

BABINE AGENCY.

MEANSKINISHT DAY SCHOOL.

I inspected this school on May 3, 1908. There were 20 pupils enrolled: 12 boys and 8 girls, graded as follows : —

	Pupils.
Standard I.	5
" II.	4
" III.	11
Total.	20

The children had made good progress during the year, and attend very well. They were all neat and clean.

GITWINGAK (KITWINGAR) DAY SCHOOL (CHURCH OF ENGLAND.)

I visited this village on May 4. It was Saturday and the school had closed the day before for holidays, but I saw the teacher and a number of the pupils. There were 41 children of school age on the reserve, of whom 39 were enrolled. The average attendance for 6 months was 24. Miss F. Royds, the teacher, was leaving. The school was fairly successful.

KITSEGUKLA DAY SCHOOL (METHODIST).

I reached this valley on May 4, and though the school had just closed for holidays, some of the children came. The register showed an enrolment of 21, with an average attendance of 14. The teacher is Miss Hannah Edgar. The pupils I saw and talked with had improved in English since the former inspection. The parents are interested in the school and spoke kindly of the work the teacher was doing. The pupils were graded thus:—

	Pupils.
Standard I.	7
" II	5
Ungraded.	9
Total	21

KISHPIAX DAY SCHOOL (METHODIST).

I inspected this school on May 6. The teacher is Miss E. Hargrave, assisted by Rev. W. H. Pierce. Forty-two pupils were enrolled, of whom 21 were present at inspection. There were 70 children of school age on the reserve. The average attendance was 26. School is held in an Indian house. A school-house would be a great improvement. Reasonable progress has been made since the former inspection. These people pleaded earnestly for an industrial school.

GLEN VOWELL DAY SCHOOL (SALVATION ARMY).

This school, which is under the auspices of the Salvation Army, I visited on May 7, accompanied by the Rev. W. H. Pierce. There were 30 children on the reserve, of whom 26 were enrolled, with an average attendance of 18. Mr. J. P. Thorkildson is the teacher, and his pupils did exceedingly well. The teacher is a very practical man, and teaches the pupils to do many useful things. One pupil has a great talent for free hand drawing. They were graded as follows:—

	Pupils.
Standard I	7
" II	11
" III	6
" IV	2
Total	26

HAZELTON DAY SCHOOL (CHURCH OF ENGLAND).

Miss E. J. Soal is a painstaking teacher. There are 40 children of school age on the reserve, of whom 35 are enrolled. Thirteen were present at inspection, 7 boys and 6 girls. The average attendance is 10. The children are graded as follows:—

	Pupils.
Standard I	11
" II	9
" III	4

The pupils have made good progress. They read and speak distinctly and all of their work was satisfactory.

COWICHAN AGENCY.

KUPER ISLAND INDUSTRIAL SCHOOL (ROMAN CATHOLIC).

I visited this school in July and in December. The members of the staff were Rev. P. Claessen, principal; Rev. W. Lemmens, teacher; J. Lecrom, trades' instructor; A. Ronault, farm instructor; Sister M. Evariste, matron; Sister M. Albert, assistant matron; Sister M. Barbara, teacher; and Sister Emiliana, cook.

In July the enrolment was 72 pupils; present at inspection 69, and in December 82—47 boys and 35 girls, with 78 present at inspection. The pupils were graded as follows:—

	Boys.	Girls.
Standard I	13	8
" II	10	4
" III	6	5
" IV	6	5
" V	6	4
" VI	4	7
	45	33

The girls did well in their examinations in reading, spelling, writing, arithmetic and history. In the same subjects the boys did fairly well and satisfactory progress has been made in the class work.

The half-day system is observed and the programme of studies prescribed by the department followed very closely.

The class-rooms are adequately supplied with all material necessary.

There are about 40 acres of good land under cultivation, and a threshing machine with a gasolene engine is used. Last year they raised 35 tons of hay, 10 sacks of oats, 40 sacks of wheat, 3 tons of beets, 2 tons of carrots, 15 tons of turnips, and 12 tons of potatoes.

About 2 or 3 acres are in garden, and in the orchard there are over 100 fruit trees, mostly young.

They have 12 cows giving milk at present; 2 horses, 1 very old; 6 calves; 1 bull and 2 pigs. There are about 150 fowl.

The boys do the milking, operate the separator, and make the butter. Six boys take regular instruction with the trades' instructor in carpentry. An open shed has been turned into a closed gymnasium for rainy and cold weather, and will also be used for entertainments.

The boys have also built a scow, and 2 sidewalks leading to the chapel, and have changed the girls' school-room and painted it.

The boys do the baking and the girls make their own garments, and make jumpers and other articles of clothing for the boys. Eight sewing-machines are run by the girls, who also do the mending, darning and ironing.

The buildings are not satisfactory for want of air capacity. They are too near the water, which causes a foul smell and dampness. The state of decay of the ground floor in the boys' building is also unhealthy. More than 20 stoves in use do not afford regular and sufficient heating. The food is abundant, while the clothing is neat, warm and comfortable. The water-supply is fairly good, and the drainage, while fair, should be carried farther out from shore and nearer to deep water.

The ventilation of the building is poor, as the ceilings of all the rooms are too low, being only 10 feet on the lower floor and 9 on the upper. They have fire-drill twice a month.

A little money, or small presents, are given to those who excel in the different departments each month.

The 6 pupils discharged last June are all doing well. One girl married an old school boy and both are doing very well. One of the boys is an assistant at an Indian boarding school. Three ex-pupils run a steamer, built by the Indians and belonging to them. They live and work like white men.

The school buildings were built about 20 years ago, and while they might do for a year or two more, better buildings with improved ventilation and other hygienic conditions are greatly needed and should be erected on the top of the hill.

They have 1 wagon, 1 plough, 1 cultivator and hoe combined, 1 harrow, 1 disk-harrow, 1 mowing-machine, and 1 threshing-machine. All the ploughing is done by the boys and instructor. The fences are old and need to be renewed. Work had already been started in this line. The barn and stables were in very poor condition.

More material will be necessary for the work the carpenter and pupils are doing.

The principal and staff are diligent and work hard to make the school a success.

NANAIMO DAY SCHOOL (METHODIST).

Mr. W. T. Knott is the teacher of this school, which I inspected on June 11, 1907. I found 8 present. Some of the pupils had gone fishing with their parents. I inspected this school again on October 29, finding 19 pupils present.

At the February inspection, 1908, there were 22 present. There were 20 children of school age on the reserve, of whom 24 are enrolled with an average attendance of 16. These pupils have made marked progress during the year. They did well in their examinations, especially in reading and arithmetic.

Their natural shyness has to a large extent given way to a bright, open face, and girls and 2 boys. The average attendance was 11. Miss C. Ordano teaches this politeness, and show great respect to strangers visiting the school.

QUAMICHAN DAY SCHOOL (ROMAN CATHOLIC).

I inspected this school on June 12, 1907, and found 22 enrolled and 7 present, 5 girls and two boys. The average attendance was 11. Miss C. Ordano teaches this school.

The reading and spelling were good, while the writing was fair. The children had made some progress. They were graded thus:—

	Pupils.
Standard I.	12
" II.	8
" III.	2

I visited the school again in February, 1908, but found that the teacher having been ill, it had been closed for 2 months. It has since been opened.

COWICHAN BAY SCHOOL (METHODIST).

I inspected this school on June 12, finding 30 enrolled, with an average attendance of 9. Eight boys and 2 girls were present. Miss Annie Cummings was the teacher, and the children did fairly well.

I inspected again on February 6, which was a very stormy day. Six were present. The bad walking in the soft snow made it difficult for children to come. The pupils read well and answered questions readily and correctly. Miss Beattie is now teaching this school.

SOMENOS DAY SCHOOL (ROMAN CATHOLIC).

Miss Maud Lomas teaches this school, which I inspected in June and again in February, 1908. There were 16 enrolled, with an average attendance of 5. Four were present at inspection. They were graded thus:—

	Pupils.
Standard I.	1
" II.	2
" III.	1

The reading and spelling was fair. It is very difficult for the teacher, as the children are so irregular. When they have learned a little, they go away, forget, and return to begin all over again.

KOKSILAH DAY SCHOOL (METHODIST).

Miss Clara Reynolds teaches this school, which I inspected in June, 1907, and in February, 1908. There are 35 children of school age on the reserve, 20 boys and 15 girls. All are enrolled, and the average attendance is 18. They are graded thus:—

	Pupils.
Standard I.	28
" II.	7

Ten were present at inspection. The school was very neat and clean. The children took great interest in the examinations, and their reading, spelling and writing were good, while the other subjects were fair. The attendance is fair.

SONGHEES DAY SCHOOL (ROMAN CATHOLIC).

I inspected this school three times during the year. There are 11 children of school age on the reserve, all of whom are enrolled, with an average attendance of 9.

On December 19, 1907, there were 9 present. Sister Mary Prudence is the teacher. The children did well in all subjects. They are neat, well dressed, polite, and as intelligent as white children. They speak good English, and are making satisfactory progress.

The teacher is very thorough in her work and the school-room is bright with flowers and pictures.

SAANICH DAY SCHOOL (ROMAN CATHOLIC).

I inspected this school on February 3, 1908. There were 16 children on the reserve, and 15 were enrolled, with 12 present at inspection. The average attendance is 8.

Mr. William Thompson is the teacher and is ably assisted by Mrs. Thompson. The reading, writing, and spelling were satisfactory, while the arithmetic was fair. The children were graded as follows:—

	Pupils.
Standard I	10
" II	5

The school has improved, but the older children going out, most of those remaining have just come of school age and are only beginners.

TSARTLIP DAY SCHOOL (ROMAN CATHOLIC).

On the reserve there are 17 children of school age, all of whom are enrolled; 15 were present at inspection and the average attendance is 8. They were graded as follows:—

	Pupils
Standard I	9
" II	5
" III	0
" IV	2
" V	1

Miss Catherine Needham is the teacher and is very much interested in the school.

The children did very well in their examinations. They had made reasonable and satisfactory progress since the former inspection.

They were well behaved.

FRASER RIVER AGENCY.

COQUALEETZA INDUSTRIAL INSTITUTE (METHODIST).

I inspected this school in June, 1907, and again on January 8, 9 and 10, 1908. The staff consisted of the following: R. H. Cairns, principal; Charles Reid, farm instructor; Louis V. Masters, carpenter; Miss F. M. Kinley, matron; Miss H. E. Young, assistant matron; Miss M. Pittman, teacher; Miss L. Peregrine, teacher; Miss H. E. Hudson, laundry teacher; Miss M. Hortop, cooking teacher; and Miss M. E. Jeffries, sewing teacher.

There were 96 pupils enrolled, of whom 88 were present at inspection.

The principal has made arrangements to have the doctor visit his school each month, for systematic medical inspection.

The pupils were graded as follows:—

	Pupils.
Standard I	31
" II	20
" III	27
" IV	12
" V	0
" VI	6
	96

The junior department do exceptionally well in reading, spelling, arithmetic, and writing. They are getting a good knowledge of English. This I discovered from questions on lessons. Miss Peregrine is certainly a good teacher. She knows how to arouse the interest and hold the attention of her pupils. In the senior department, in addition to the foregoing subjects, they study grammar, geography, history and hygiene. Their composition is good, showing a grasp of the subject. Progress had been made in every line during the year.

The good order in both rooms is very noticeable. The half-day system is in vogue and seems very satisfactory. The class-rooms are in very good condition, but the junior room is rather crowded since the building was burned in December, 1906.

There are 88 acres of good land, all of which is under cultivation. Grain, hay, roots, beans, &c., were raised and the crops were fair, although last season was very dry. There are some 8 acres in orchard and garden. We gathered 300 boxes of good apples, 700 sacks of potatoes, while cauliflowers, tomatoes, &c., were grown in abundance.

There are 15 cows, 5 head of young cattle, 1 Jersey bull, 7 horses, 8 hogs and 50 hens. The boys attend to the stock, all of which were looking well. The hen-house, the pens and stables were all clean and dry.

During the past summer they milked 12 cows, which gave an abundant supply of good cream and milk. Besides this, they more than paid for the butter bill. The cows have done well and the boys are becoming expert in caring for stock.

At present there are 4 boys learning the use of tools and doing very good work.

The girls cook, sew and do laundry work, and, indeed, all kinds of general housework.

The drains, &c., are kept thoroughly clean and sanitary, while the ventilation is fair. The Smead-Dowd system of furnaces is installed.

The children have plenty of good wholesome food and are well and warmly clothed.

The boys are drilled and prepared to fight fire in cases of emergency. There is plenty of water and, I think, 2 hydrants should be put in at once, so that the school and principal's residence could be covered by a 2-inch hose. Fire-drill is held frequently.

One young man and his wife, both ex-pupils of this school, live on a piece of land near the school and are doing well. Several ex-pupils are working in Vancouver and are a credit to the institute. One boy is doing well as a waiter on the SS. *Princess May;* one has a store at Kitamaat, and another is fishing and doing well.

The buildings are in good repair, but a better laundry is required, as the present one is in the basement and is very damp.

On December 31 all bills were paid, and the school had a balance in hand of $9.20. The principal is a good manager.

I was all through the building and found everything neat and clean. Each member of the staff is interested in the work and the pupils get the best of attention.

I consider that very satisfactory work is being done by this institution.

ST. MARY'S BOARDING SCHOOL (ROMAN CATHOLIC).

I inspected this school in July, and again in February, 1908. The staff consisted of Rev. J. P. O'Neill, O.M.I., principal; Sister M. Benedict, matron and teacher in girls' school; Sister M. Rogation, teacher in boys' school; Sister M. Monica, teacher in boys' school; Sister M. Romuald, teacher in girls' school, and J. P. Collins, farm instructor.

In July there were 75 pupils present, while in February 77 were enrolled. They were graded as follows:—

	Boys	Girls.
Standard I	5	4
" II	7	9
" III	10	17
" IV	6	9
" V	7	3
	35	42

Reading, spelling, history, grammar, arithmetic, geography and writing were good. I noticed an improvement in English, both oral and written. The half-day system is followed and is found satisfactory. The school-rooms are fairly well equipped.

Farming, gardening, carpentry, painting and a little shoemaking are taught the boys, while the girls are taught housework, dressmaking and cooking. All the children looked neat and clean.

About 100 acres of land are cultivated, and hay oats, wheat, potatoes and other roots and vegetables are grown. About 2 acres are used for garden purposes and small fruits, and the different varieties of table vegetables are raised.

They have about 35 cows and calves, 4 horses, 3 colts, and 6 hogs. Their accommodation is fair, although improvements will shortly be required, as the stables are old. They have 60 hens and a few ducks. Sufficient butter is made for the use of both schools.

Three boys were working at carpentry. The girls are taught laundry and fancy work.

The health of the pupils in general has been very good during the past six months. The food is wholesome and abundant, while the clothing is neat, clean and suitable. The water-supply has been much improved on account of the new system of pipes installed by the department.

I tried it and the hose threw a good stream over the building. The children are drilled occasionally in the use of extinguishers and fire-buckets, which are always filled and ready in both buildings. The hose supplied by the department is in readiness, both for the interior and exterior of the buildings, in case of fire. The children know how to use it effectively.

The children are rewarded by games, books and other little prizes, and in summer, with occasional picnics to encourage them.

The buildings are in fairly good condition. A good many additions and repairs have been lately made, viz.: a large and spacious concrete cellar for potatoes and roots, a new granary, and a house for the pupils' parents when they come to visit the scholars.

I know of some of the ex-pupils who are thrifty and are living in a respectable manner.

The best of good feeling prevails in the school. The children are as studious and obedient as can be expected, and the girls' work in the laundry is worthy of mention.

I consider that this school is doing satisfactory work.

YALE (ALL HALLOWS) GIRLS' BOARDING SCHOOL (CHURCH OF ENGLAND.)

I inspected this school in June, 1907 and again in February, 1908. The staff consisted of Sister Constance, C.A.H., principal; Sister Althea, C.A.H., vice-principal; Sister Marion, C.A.H., teacher; Miss Harris, teacher; and Miss Moody, matron.

There were 24 pupils enrolled at both inspections. All of these were present in June, and in February 22 were present, and 6 pupils attending were not on the roll. They were graded thus:—

	Pupils
Standard I.	7
" II.	4
" III.	4
" IV.	5
" V.	5
" VI.	5

The examinations, both oral and written, showed that reasonable progress had been made during the year, the reading, spelling, history, geography, arithmetic and grammar, being very good.

New desks, furnished by the department, add very much to the general appearance of the school-room and to the comfort of the scholars.

The school buildings stand in about 4 acres of ground, about half an acre of which is laid out as orchard and kitchen garden.

Large quantities of fruit, principally cherries, plums, raspberries, and a good supply of vegetables are raised each year. The soil is well adapted for fruit-growing, but is too light for raising heavy root crops. The garden is well kept.

The girls are taught and trained chiefly in housework, sewing, bread-making, and a few in cookery. In the summer a number are taught to work in the garden. The food is plain, but good and abundant.

Excellent water is obtained from a mountain stream close by the school. The school is well ventilated. Windows and large ventilators are kept open night and day even in the winter in the sleeping apartment, but two additional windows are needed in the large dormitory to take the place of two that were closed by the addition of other rooms on that end.

Fire-drill as recommended by the department is occasionally practised. They have now 4 Star extinguishers, some fire-buckets, and an axe, which were furnished by the department at various times.

An alarm was given at the time of my visit, and the girls were out in good time.

The ex-pupils in general are doing well. Some have married respectable Englishmen and are comfortably settled, others have been at service for several years and giving satisfaction to their employers.

The buildings are in fairly good repair, except that the school building needs shingling and painting outside, as well as new sills to the back of the building, as the present ones have rotted with the drainage from the mountain side.

Since the first inspection Sister Amy has retired, and Sister Constance has taken her place as principal. The school is doing very satisfactory work. The girls are very bright and some of them quite clever.

SQUAMISH BOARDING SCHOOL (ROMAN CATHOLIC).

I inspected this school on October 18, 1907. The staff consisted of Sister Mary Amy, principal; Sister Mary Eugene, matron; Sister Mary Felician, teacher; Sister Mary Jerome, teacher; Sister Mary Anatolie, cook; J. Duruisseau, gardener.

There were 67 pupils enrolled and 62 present at inspection. They were graded in the following manner:—

	Boys.	Girls.	Total.
Standard I.	14	15	29
" II.	3	7	10
" III.	6	4	10
" IV.	4	8	12
" V.	2	0	2
" VI.	0	4	4

The pupils have done very well during the year and the examinations proved to be satisfactory. They answered most of the questions put to them in grammar, arithmetic, geography and Bible history, &c. They sang nicely, and the drawing and writing was very neat and well done.

The boys are taught gardening, shoe-repairing, glazing, painting, &c., and the girls learn housekeeping, hand and machine sewing, plain and fancy work and dressmaking. I examined the work done and it was very creditable.

Two acres of land are laid out in vegetable garden and flower beds, all nicely kept, and producing all kinds of flowers and vegetables, such as cabbage, carrots, turnips, endive, celery, lettuce, corn, beans, pease, lentils, &c. The last named vegetable has been a real success this last year.

They have 3 cows and 1 horse, and about 60 chickens.

Though most of the children have had measles, there were no deaths, and they now look as healthy as ever.

The building is now connected with the city water-works, and thus is abundantly supplied with pure cold water.

They have two Stempel fire-extinguishers, 18 fire-buckets, 300 feet of rubber hose, 2 hose and 2 ladders, &c. The boys and girls have drill once a month.

Most of the ex-pupils are logging or fishing. I met some of those who were working and they seem to be thrifty.

SECHELT BOARDING SCHOOL (ROMAN CATHOLIC).

I inspected this school on October 24 and 25, 1907. The staff at that time consisted of the following:—Sister Theresine, principal; Sister St. Ouen, matron; Sister Victorien, teacher; Sister Stephanus, teacher; Sister St. Denis, teacher; and Sister Amelia, cook.

Nineteen boys and 25 girls were enrolled and all were present at inspection. They were classified as follows:—

Standard I.	6	7
" II.	3	6
" III.	6	6
" IV.	4	6

I examined the pupils in reading, spelling, geography, grammar, arithmetic, and writing. The reading, spelling and writing were excellent and the other subjects fair. The children appear to take a great interest in their studies and are making good progress.

About ½ an acre is cultivated as a vegetable garden, in which all vegetables suitable to the climate are grown.

They have 1 cow and 1 heifer, and about 60 chickens.

Four of the bigger boys received a little training in carpentering, 2 repair shoes, and all of them like to make netting and miniature boats.

The girls are taught all kinds of housework, mending, sewing, dressmaking, knitting, and fancy-work. Lately they made miniature cradles for dolls (basket work), &c., which are unique and are finding a ready sale. I think it is wise of the principal to encourage this work, as the girls soon become experts. The food and clothing are good and sufficient and all looked well. The water-supply is good, the new pipes laid giving great satisfaction, and ventilation and drainage are good. The fire-appliances are always kept ready and they have fire-drill twice a month.

Two boys who were discharged last July are working as carpenters and doing well.

The school-house is complete and is very comfortable and in good repair, but some outbuildings are required, such as laundry, cow-stable, root-house and workshop.

The principal and staff have no salary and I cannot speak too highly of their self-sacrificing labours.

The children are all bright and clean. They speak good English and are well behaved. They also have learned to sing nicely.

I found everything about the premises clean and in good order.

KAMLOOPS-OKANAGAN AGENCY.

KAMLOOPS INDUSTRIAL SCHOOL (ROMAN CATHOLIC).

I inspected this school in May, 1907, and again in January, 1908. The staff then consisted of, Rev. A. M. Carion, principal; N. Poirier, trades instructor; Sister M. Paula, matron and teacher; Sister M. Liliose, boys' teacher; Sister M. Ovide, cook; Sister M. Didace, assistant matron.

Twenty-nine boys and 33 girls were enrolled, and at the first inspection, 62 were present, while in January there were 58. I examined the classes in reading, spelling, writing, geography, arithmetic and history. They did very well and had made fair progress.

The girls had improved more than the boys. Four of the bigger girls were quite clever in class work. Singing and motion songs were well rendered. The pupils are not afraid to speak and read loudly.

About 200 acres are fenced, being mostly poor, dry, sandy pasture, on which but little grows. About 15 acres are under cultivation. Alfalfa and oats hay were raised, and where the land could be irrigated from the windmill (supplied by the department) the crops were very good, but one windmill is not enough to irrigate the whole field. About 15 tons of good hay were made, but if they had another windmill, the crops would be doubled.

About 4 acres are in garden, containing a small orchard, raspberry patch and small alfalfa field. The crops raised were 22 tons of potatoes, 1150 pounds of beans, 10 tons of mangolds and carrots, besides table beets, onions, pease, cabbage and corn.

They have 4 horses, 1 bull, 5 cows with calves, 1 dry cow. The accommodation for the stock is very good. They have 42 fowls. Five cows are milked by the boys and the girls make the butter.

Eight boys are learning carpentry. During the year they have done different kinds of repair-work, finished the new class-room, occupied now by the girls, and painted it inside and out. There are 4 pupils who repair the shoes for all the pupils as well as the harness used on the farm.

The girls cook, wash, iron and make clothing.

The sanitary condition is very good. Last fall and summer they had an epidemic of measles, but the health of the pupils is good at present. I saw the pupils at their meals and the food was sufficient and of good quality. The clothing is suitable and neat.

The water, which is pumped from the river when needed, is good and sufficient. The drainage is good and sanitary. Ventilation is carefully attended to, and sufficient is obtained by means of windows. The fire-extinguishers, buckets, axes, &c., are in good condition and during most of the year there is sufficient water and pressure, but in winter water cannot be kept in the tank, which is on the top of the tower. Means should be taken to protect the tank against frost in winter, for if a fire should occur in a time of severe cold, there would be no water available to fight it. There is occasional fire-drill.

Skating, sliding, hockey and ball are their favourite pastimes, and they have plenty of exercise in the open air.

Most of the ex-pupils live on their reserves. Many of the boys are working for white people, who are well pleased with them. In general the ex-pupils I saw, are doing well.

Good work is being done in the class-rooms, and in the industries, they are doing all that can be expected in the way of farming, considering the situation and the poor land.

The principal and staff are working hard to benefit the school.

LYTTON INDUSTRIAL SCHOOL (CHURCH OF ENGLAND).

I inspected this school on January 23 and 24, 1908. The staff then consisted of—Rev. Geo. Ditcham, principal; Thomas E. Smith, carpenter; Jessie May Dyer, matron; Sing, cook; and Jim Kennedy, farmer.

Thirty-five pupils were enrolled and 30 were present at inspection. They were classified in the following manner :—

Standard I.	7	pupils.
" II.	0	"
" III.	12	"
" IV.	0	"
" V.	16	"

The pupils read very nicely and did very well in spelling, writing, geography, history and arithmetic, &c. Very good progress has been made during the year. In the class-rooms, everything needful is on hand.

Over 100 acres are farmed and most of the work is done by the boys. They raised 20 tons of potatoes, 10 tons of wheat, 4 tons of oats, 6 tons of roots, 70 tons of hay and 3 acres of field corn. Thirteen acres are in garden. Watermelons, muskmelons, citrons, sweet potatoes, sweet corn, tree fruits, bush fruits, and other garden truck are grown.

Sixteen tons of watermelons were grown and sold in Vancouver, being better than those from California.

They have 36 cattle, 7 horses, 56 sheep, 39 pigs, and a fine lot of young lambs. There are also 30 chickens and 3 geese.

There is no butter made; as the milk is used in the school. Five boys are working with the trades' instructor and are doing well.

The health in general is good. Three pupils who were in the hospital were recovering. Both food and clothing were good and sufficient. The water-supply, by gravitation from a tank in the creek, is good.

The drainage is carried by sewer pipes, 150 feet off from the school building and is flushed by a pipe from the creek.

There are good air shafts and ventilators in all the rooms.

They have no fire-drill. There is 1½-inch pipe over the roof perforated every foot; fire-escapes, to balconies north and south of each dormitory; rubber hose, fire-buckets and axes, all in readiness.

I found all the buildings in good order. A fine new stone chapel has been built by the New England Society at a cost of $6,000. They have also built a stone cellar, a frame carpenter-shop; and a large stable was under construction.

Every part of the building was well kept and neat.

LYTTON DAY SCHOOL (CHURCH OF ENGLAND).

I inspected this school on January 23, 1908. There were 40 children of school age on the reserve, and 31 enrolled.

Twenty-six were present at inspection. This is a new school, only opened in October. The children are all in standard I.

Miss Lily Blackford is the teacher and she has made a good start with the school. The children are intelligent and want to learn, and their parents encourage them to attend.

WILLIAMS LAKE AGENCY.

WILLIAMS LAKE INDUSTRIAL SCHOOL (ROMAN CATHOLIC).

I inspected this school on October 9, to 13, inclusive.

Rev. H. Boening is principal with the following staff: C. M. Beget, carpenter; J. F. Casey, foreman; Sister Euphrasia, matron and teacher; Sister Seraphim, teacher of small boys; Sister Gabriel, teacher of the older girls; Sister Octavia, teacher of the young girls; Sister Fabian, cook; and Sister Eloid, assistant cook.

Sister Joannes, the seamstress, left a few days before my arrival on account of ill health. Another sister was expected to take her place. There were 65 pupils enrolled, and 11 not yet formally enrolled; total 76. They were graded as follows:—

	Boys.	Girls.	Total.
Standard I.	5	4	9
" II.	7	10	17
" III.	6	15	21
" IV.	3	7	10
" V.	6	6	12
" VI.	3	4	7

I examined the children in reading, grammar, spelling, arithmetic, gography, history, writing and drawing. The reading was excellent, clear and distinct, and their answers showed that they clearly understood what they were reading. The spelling was excellent all round, among the seniors as well as the juniors. There are 8 children from Stewart's Lake in the Babine agency, and I do not doubt that the return of these children to their home will produce a good effect.

There are about 500 acres under cultivation, the remainder being grazing, timber and wild land. Last year's crop consisted of 350 tons of hay, 9 ton of oats, 9 of wheat, 40 tons of potatoes, and 5,000 pounds of pease

About 1 acre is in garden, in which all fruits and vegetables suitable to the climate are grown. Some apple-trees have been tested and some are beginning to bear fairly well.

The stock consists of 26 horses, 400 head of cattle, 18 milch cows, and 29 large and small pigs

They have also 100 chickens.

Two boys are constantly employed in the carpenter's shop under a competent instructor. Other boys, too, are occasionally employed, so as to be ready to take the place of those who go out. All are employed in the field during the busy season, and under the direction of the foreman, the senior pupils attended to the garden while the juniors did the weeding.

The girls are taught every branch of domestic work, and the older girls cut out and make their own clothes and many articles for the boys, while the younger girls attend to the mending, darning, &c.

They attend to the poultry, assist in making soap and care for the milk and butter.

These children are exceptionally healthy and look well. The food is good and sufficient. A beef from off the farm is killed every week and their vegetables are plentiful and excellent. I saw them at their meals. I examined the stores of clothing and shoes for the boys and girls are found all of good quality. The water supply has been greatly improved since my former inspection, so that, during last winter, one of the severest on record, the water-supply never failed.

The drainage is good. The ceilings being high and the windows numerous, the ventilation is good and the air pure. Appliances for fighting fire are kept always at hand. Drill is held twice a month and two minutes after an alarm is given, the pupils are all out.

The institution is keeping 26 pupils above the number for which a grant is allowed. At a distance of 135 miles from the nearest railway station, it is imperative for the management to keep large supplies always on hand. I inspected all the buildings and found them in order and repair, the dormitories, school-room, kitchen and dining-rooms being scrupulously clean.

The management was building a new barn, one that I consider by far the best and most substantial in the neighbourhood. Its dimensions are 70 x 40 x 36 feet, and will give accommodation for 32 horses and a large quantity of hay.

I thoroughly examined every department and am satisfied that the school is accomplishing what the department desires such schools to do. I found the pupils well behaved and whenever I met them in the buildings, or on the playground, they greeted me in good English and in a most respectful manner.

KOOTENAY AGENCY.

KOOTENAY INDUSTRIAL SCHOOL (ROMAN CATHOLIC).

This school, which is located on St. Eugene Mission, adjoining St. Mary's reserve, I inspected on January 16 and 17, 1908.

The staff at that time comprised the following members:—Rev. J. Wagner, O.M.I., principal; Sister Mary Dolores, superior; Sister Justinian, matron and seamstress; Sister Philomena, assistant seamstress; Sister Gervais, boys' matron and seamstress; Sister Angelica, girls' teacher; Sister M. Theophane, boys' teacher; Sister Foucault, cook; Mr. N. MacDonald, farm instructor; and Mr. Austin, bandmaster.

There are 50 pupils enrolled and 20 not enrolled. Seventy were present at inspection. The pupils, not enrolled awaiting admission are in standard I: the others are graded as follows :—

	Boys.	Girls.	Total.
Standard I	6	4	10
" II	3	4	7
" III	11	7	18
" IV	3	6	9
" V	3	2	5
" VI	1	0	1

The pupils were examined in reading, spelling, writing, arithmetic, geography, grammar and history. The progress made since my last report has been very satisfactory. The reading and spelling were particularly good. The class-rooms are neatly furnished, and the books clean and in good order and of sufficient number.

There are 184 acres of land under cultivation, divided as follows :—2 acres in vegetable garden, 2 in orchard, 2 in potato garden, 5 acres in grain-field, 5 in meadow, 118 acres in pasture-land and 50 acres in hay-land. The crops raised were 80 tons of hay, 9 tons of potatoes and 5 acres of oats.

Quite a variety of vegetables were raised, and they have cabbages, turnips, carrots and parsnips sufficient until next season. The work is done by the pupils under the direction of a gardener.

They have 5 horses, 14 milch cows, 70 head of cattle, and 6 pigs, all of which are in good condition.

The boys do the milking, but the girls attend to the dairy work. Butter is made during the entire year. Last summer several hundred pounds were pickled for use during the winter.

Two pupils do the repairing of the pupils' shoes and the harness for the horses.

The girls looked very neat in uniforms cut and made by themselves.

Besides making new clothes, they are taught to mend and darn their old clothes, and make a number of garments for the boys.

The health of the pupils in general is good. The food is plain, but well prepared, suitable and sufficient.

The water-works have thus far proved satisfactory and the water is good. Ventilation is as good as possible in such low buildings.

Fire-extinguishers, buckets, ladders, axes, and hose are placed in convenient positions throughout the buildings, and the boys and girls have occasional fire-drill.

A certain number of prizes are awarded each year to pupils who reach the head of the various classes.

I saw some of the ex-pupils, who appeared to be thrifty and have profited by the education received. Most of them are farming.

The buildings are poor, as stated in a former report, but the work of the school is in a very satisfactory condition.

KWAKEWLTH AGENCY.

ALERT BAY DAY SCHOOL (CHURCH OF ENGLAND).

I inspected this school on August 22, and again on February 20, 1908. There are 30 children of school age on the reserve, all of whom are enrolled, but very irregular in attendance. Eleven were present at inspection.

The pupils were graded as follows :—

Standard I.	20	pupils.
" II.	7	"
" III.	2	"
" IV.	0	"
" V.	1	"

Mr. Frank S. Ford is the teacher.

The children could read and spell and had a slight knowledge of geography. Their writing was fair and the singing good.

Very little progress has been made. The parents are so frequently 'potlatching,' that the school has little opportunity to do much with their children.

ALERT BAY DAY SCHOOL (CHURCH OF ENGLAND.)

I inspected this school in August and in February from the 22nd to the 26th, 1908. The staff consists of the following members :—A. W. Corker, principal; Mrs. Corker, matron; Miss Warrener, assistant matron; J. Carter, trades instructor; G. M. Luther, teacher ; and Ah David, cook.

There were 26 children enrolled with 24 present at inspection. They were graded as follows :—

Standard I.	3	pupils.
" II.	5	"
" III.	7	"
" IV.	8	"
" V.	3	"

The examinations showed satisfactory progress during the year. Their reading was very good and in geography, grammar, scripture, and general knowledge they did well. The work is neatly and smartly done, copy-books, exercise-books and drawing-books, being a credit to the school.

Ten acres of land near the school needs to be cleared and cultivated. A quarter of an acre is devoted to growing good fresh vegetables, and about 1 ton of potatoes was raised last year.

They have 2 cows, one of which is milking. The elder boys take turns in the workshop. I saw wheel-barrows and type boxes (for printing press) just completed, also wooden trunks, all of which were neatly made. Three pupils repair the boots.

The sanitary condition is fair. The principal has just put in a new wooden drain. A terra-cotta pipe drain is much needed.

Good water is supplied from the well. It is pumped up into wooden cisterns and pipes carry it to the house. Ventilation is good and sufficient. The windows and ventilators are always open.

The fire-buckets are kept filled and axes, hose, and 2 ladders are always at hand. I have recommended that a fire-escape, which is needed for the upper bed-rooms, be granted. They have fire-drill twice a month.

I gave an alarm at 10.40 p.m., when all the pupils had retired, and in 65 seconds every one was out of the building. The orderly way in which they conducted themselves showed that they had been thoroughly trained. They also had practice in the middle of a meal, the next day, when all the pupils were out of the dining-room, and had the hose attached to the pump and water playing on the roof of the class-room in 3½ minutes. The boys handled and climbed the ladders in fine style.

Discipline is very well maintained. Of the ex-pupils, Geo. Luther, teaching in the Indian school, is a fine young man and is going to college in Toronto, to prepare for missionary work. I met several of those from the north, and they are doing well and are a credit to the school and the department.

All the buildings are in good repair, except the upper bed-room, which needs lining badly. It was never finished and 10 boys sleep in it now, while if it were fitted up, there would be room for 15 beds more. The workshop is very small and a larger one is needed.

The boys without exception looked well and healthy, they are well behaved and appear to be very happy.

GWAYASDUMS DAY SCHOOL (CHURCH OF ENGLAND).

I visited this school on February 21, 1908. There are 25 children of school age on the reserve, all enrolled, with an average attendance of 8. Eight were present at inspection.

The children were graded as follows:—

Standard	I	20 pupils.
"	II	4 "
"	III	1 "

The parents at this village have no control over their children, hence they stay away from school. Mr. Herbert Pearson is the teacher.

A little progress had been made since the former inspection. These Indians spend a great part of their time dancing and 'potlatching,' and are quite indifferent regarding the school.

NORTHWEST COAST AGENCY.

PORT ESSINGTON DAY SCHOOL (METHODIST).

I inspected this school on April 24, and November 13, 1907, and again on March 17, 1908. Miss K. Tranter is the teacher.

This is an exceptionally good day school. Thirty-one were enrolled, with an average attendance of 15. The average would be higher, but an epidemic of measles and afterwards grippe attacked the children severely. The children in examinations did very well in reading, spelling, geography, and history. Satisfactory progress had been made in all their studies.

NEW TOWN, KITSELAS DAY SCHOOL (METHODIST).

I visited this school on April 28, 1907. I found the school closed, the teacher, Simon Ellis, having died suddenly. The people called a meeting and assured me they approved of the school, and asked for a teacher to take the place of the late teacher, of whom they spoke very highly. Robert Tate, a native from Port Simpson, opened the school during the summer.

KINCOLITH DAY SCHOOL (CHURCH OF ENGLAND).

This school, which is situated at the mouth of the Nass river, I inspected on September 6, 1907. There were 55 children of school age in the village, all enrolled, and 24 were present at inspection. Miss Emily C. Collison is the teacher and takes much interest in her work. The pupils were graded as follows:—

Standard I.	21	pupils.
" II.	14	"
" III.	4	"
" IV.	10	"
Not graded.	6	"

I heard them read, spell and recite, all of which they did very well. Their writing, history, singing and scripture lessons were good, while the arithmetic was very fair. This school had made very satisfactory progress since the former inspection. The children were all neat and clean. A new school-house is greatly needed.

LACKALSAP AND AIYANSH DAY SCHOOLS (CHURCH OF ENGLAND).

I visited Lackalsap on September 9, and found the school had been closed all summer. The Aiyansh school was also closed since March.

PORT SIMPSON BOYS' HOME BOARDING SCHOOL (METHODIST).

I inspected this school in September, 1907, and again in March, 1908. The staff consisted of C. H. Johnston, principal and teacher, and Miss Reta Johnston, matron; the staff was leaving on the first of April.

There were 22 pupils on the roll and 18 present at inspection, in September, but in March 15 were enrolled and 11 present. They were graded as follows:—

Standard I.	0	pupils.
" II.	3	"
" III.	2	"
" IV.	6	"

The reading and spelling were very good, while arithmetic, geography, grammar and history, were fair. The writing was neat and good.

Reasonable progress had been made. The boys go to the day school class-room, which is well equipped with desks and blackboards, but the books are old and worn, and the slates broken. The teacher informed me that a new supply was daily expected.

About half an acre is cultivated, and although hard to drain and cultivate, is very productive. Potatoes, cabbages, turnips, lettuce, and small fruits grow in abundance.

The health of the boys was fairly good. They had had measles, but had recovered. Four were down with influenza, at the time of my inspection, but these were recovering when I left the village. I saw the boys at their meals and the food though plain, was good and sufficient. All were well clothed.

The water-supply is poor at present. New drains have improved the drainage to some extent, but it is still very poor. Ventilation is very poor, especially in the dormitories. There is very little protection in case of fire. Drill is held at regular intervals, but they are badly off for water.

Prizes are given at Christmas to those who excel in studies and at work.

I saw some of the ex-pupils, who were working in the neighbourhood, and they were thrifty.

The buildings are very poor. The poor building and appliances make it very difficult to do satisfactory work.

The fences were down and the surroundings very untidy. The Rev. Mr. Raley assured me that these will be put in order.

PORT SIMPSON DAY SCHOOL (METHODIST).

I inspected this school on September 13, and again in March. There are about 200 children on the reserve, but 40 of these are in the boarding schools, leaving 160 in the village, with 126 enrolled, the average attendance for 3 months being 49. There were 10 present at inspection and only 3 of these were from the village, the remainder belonged to the boarding school.

The examinations were only fair and there is much room for improvement. Mr. Bernard Arthur Savage, who has lately taken charge, holds an English certificate. Mrs. A. Dudaward assists him.

METLAKATLA INDUSTRIAL SCHOOL (CHURCH OF ENGLAND).

During September, 1907, I visited the school and found it closed, as the boys who had just returned from vacation had measles. Only 13 were in residence, as on this account the others did not go back.

The girls' school was not opened, owing to the same cause. The Indians were very much afraid of the disease.

On December 4 and 5 I inspected the school, but found the girls' department still closed. There were 33 boys enrolled, but only 13 present. Those pupils who were absent on vacation at the time the sickness broke out have remained away, and there had not been any new admissions. The pupils were graded as follows:—

	Pupils.
Standard I.	2
" II.	2
" III.	9

Considering that the pupils had not been regularly to school owing to illness, they did very well in the examinations.

Mr. J. R. Scott is the principal, with Miss Mary A. Johnson, matron, and Wong Lau, cook. Miss Johnson also teaches.

The pronunciation was distinct and good. Mr. Scott, who has been in charge from the time the school was established, and doing good work, has tendered his resignation. The church requests the department to take complete control and pay all accounts. Reports I have forwarded cover all the details.

METLAKATLA DAY SCHOOL (CHURCH OF ENGLAND).

I inspected this school on December 4, 1907. The teacher is Miss Mary A. Johnson. There are 33 children of school age on the reserve, all of whom are enrolled. Seventeen were present at inspection, and the average attendance is 9. The reading, writing, spelling, arithmetic and geography were good and their grammar and composition, fair. The lumber is on hand for the new school-house.

SKIDEGATE DAY SCHOOL (METHODIST).

I visited this school on September 23, 1907. There were 29 children of school age; 14 boys and 15 girls, with 17 enrolled and an average attendance of 10.

Miss Grace Russ, the teacher, an educated Indian, was holding school, awaiting the arrival of the new teacher. Miss Johnson is now teaching. The children I found neat, bright and intelligent. They do very well with their studies and are graded as follows:—

Standard I.	13	pupils.
" II.	3	"
" III.	1	"

The children were very clean and better dressed than at any other Indian village in the province.

BELLA BELLA DAY SCHOOL (METHODIST).

I inspected this school on November 6, 1907. There are 38 boys and 35 girls of school age on the reserve; total, 73. There were 37 enrolled, with an average attendance of 15. There were 25 present at inspection. The pupils were graded as follows:—

Standard I.	5	pupils.
" II.	13	"
" III.	17	"
" IV.	2	"

Miss Ethel L. Morris, an excellent teacher, holds a first-class certificate for Ontario. The children did well in writing, reading, spelling, geography, composition and history.

The parents often go away to work and are obliged to take their children with them. They wish the children to reside in school and so pleaded very strongly for a boarding school.

KITAMAAT DAY SCHOOL (METHODIST).

I visited Kitamaat in November, 1907, and again on March 9, 1908. There were 52 children of school age on the reserve, 32 boys and 20 girls, all enrolled, with an average attendance of 26. The pupils were graded as follows:—

Standard I.	32	pupils.
" II.	10	"
" III.	10	"

Miss Dorothea J. Bower, M.D., is the teacher. The children did very well in reading, spelling, writing, arithmetic, and geography. Reasonable progress had been made. The frame of the new school-house was up, and when completed will be a great improvement.

HARTLEY BAY DAY SCHOOL (METHODIST).

I was at this village three times during the year. The teachers have changed twice and the school was closed for some time.

In March I found Mr. W. E. Loyle teaching. There are 17 children of school age on the reserve, with an average attendance of 13. They were graded as follows:—

Standard I.	5	pupils.
" II.	9	"
" III.	3	"

The children are very intelligent and do well in their studies.

The parents take an interest in the school and object to the continual change of teachers. Mr. Loyle would do well, but the Church authorities have removed him, and Mr. Johnson is now in charge.

CHINA HAT DAY SCHOOL (METHODIST).

I inspected this school on November 15. There are 19 children of school age on the reserve, all enrolled, with an average attendance of 5. Eleven were present at inspection.

The pupils are all in the first standard. Mr. G. Reid is the teacher. The children read, spell and write fairly well and have a slight knowledge of figures. They are frequently away with their parents.

BELLA COOLA DAY SCHOOL (METHODIST).

I visited this school on November 20, 1907.

There are 26 children on the reserve, 23 of whom are enrolled, with an average attendance of 6. There were 13 present at inspection. The children read well and the other subjects were fair. Four pupils who had attended regularly have made satisfactory progress. The school is improving.

Miss Eveline Gibson is the teacher.

PORT SIMPSON (CROSBY) GIRLS' HOME BOARDING SCHOOL (METHODIST).

I visited this school in September, 1907, and again in March, 1908. The staff is composed of the following members:—Miss Hannah M. Paul, principal and teacher; Miss Ida Clarke, matron; Miss Sarah E. Scholefield, sewing teacher; and Miss Lottie M. Deacon, assistant matron.

Forty-two girls were enrolled and all were present at inspection. They were classified as follows:—

Standard	I	7 pupils.
"	Jr. II	2 "
"	Sr. II	11 "
"	III	7 "
"	IV	14 "
"	V	1 "

The pupils did very well in their examinations, both oral and written. The younger pupils are taught arithmetic, reading, writing and spelling, while the older pupils also have the additional subjects of geography, grammar, history and composition. Several have lessons in music, vocal and instrumental.

The regular school hours are observed, and the girls, who are intelligent and bright, take an interest in their work.

The class-rooms are very well furnished, but a reading frame would assist the little ones.

About ¼ acre is cultivated as a vegetable garden, and the vegetables and small fruits suitable to the soil are grown. The girls are taught general housework laundry work, sewing and dressmaking. They also make very good bread and do plain cooking.

The sanitary condition has been improved and there has been no epidemic except grippe, which did not prove serious.

Both food and clothing were suitable and sufficient, and the water-supply is splendid, with the exception of about two weeks in very cold weather. The drainage has been improved.

The ventilation, which is obtained by means of opening windows, is not very satisfactory. They have the usual appliances for fighting fire, but the building, which is 3 storeys high, is not very safe in case of fire. The girls are well drilled in the use of the escape, &c.

The discipline is firm, but no complaints were made at this inspection by pupils or parents.

Of the ex-pupils several are doing satisfactory work as general domestics, several are married and the others are at home with their parents.

The buildings are in fairly good condition. Slight repairs are being made at the present time.

I found the school doing more satisfactory work than ever before.

GENERAL REMARKS.

The day schools at Nitanit, Ohiaht, Cape Mudge, Massett, and Kitkahtla, when visited, were closed for summer holidays, or on account of sickness, and were not inspected.

Kyaquot, Kisgegas, and Yuquot, I did not reach during the year.

The day schools, excepting a few, are so hard to keep up, an epidemic of measles and a siege of grippe, making it more difficult this year than usual.

Where an epidemic occurred there was less mortality in the boarding schools, owing to the care taken of the children, than among the villagers of the same place.

The schools where the children are in residence show very satisfactory results.

I have, &c.,

A. E. GREEN,

Inspector of Indian Schools.

PART II

TABULAR STATEMENTS

FINANCIAL STATEMENTS

Showing Receipts and Expenditure of the various Boarding and Industrial Schools, for the fiscal year ended March 31, 1908.

CHAPLEAU BOARDING SCHOOL, ONT.

(Church of England.)

Receipts.	$ cts.	$ cts.
Government grant, per capita		1,037 00
" " building and equipment		3,026 43
Farm and garden		50 00
W. A. towards cost of beds		50 00
Total receipts		4,163 43
Expenditure.		
Salaries	1,200 00	
Extra labour	360 00	
Food	980 00	
Clothing	100 00	
Fuel, $207.85; light, $25	232 85	
Buildings and repairs	1,153 97	
Equipment and furniture	340 00	
Farm and garden	20 00	
Transport, travelling expenses, freight	27 61	
Miscellaneous	40 00	
Total expenditure	4,454 43	
Excess of expenditure over receipts		291 00
	4,454 43	4,454 43

FORT WILLIAM ORPHANAGE, ONT.

(Roman Catholic.)

Receipts.	$ cts.	$ cts.
Government grant, per capita		1,473 00
Contributed from other sources		1,447 55
Value of clothing contributed		50 00
Total receipts		2,970 55
Expenditure.		
Deficit	174 13	
Wages for manual labour	380 00	
Food	1,753 20	
Clothing	291 36	
Fuel and light	784 22	
Transport, travelling expenses and express	76 25	
Equipment and furniture	212 98	
Miscellaneous	176 29	
Total expenditure	3,848 43	
Excess of expenditure over receipts		877 88
	3,848 43	3,848 43

Note.—The purchase money of the old buildings, is placed with the secretary in Peterborough for the purpose of erecting the new orphanage.

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

BIRTLE BOARDING SCHOOL, MAN.

(Presbyterian.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		398 00
Government grant, per capita		2,972 40
" for heating		456 48
" fire protection and ventilation		207 90
W. F. M. S.—Salaries		2,401 50
" Clothing		1,457 81
" Equipment		29 10
Presbyterian Church, loan		650 00
Miscellaneous receipts		80 05
Total receipts		8,653 24
EXPENDITURE.		
Salaries (staff)	2,346 48	
Extra labour	93 04	
Food	1,891 71	
Clothing and boots	1,564 08	
Fuel and light	576 66	
Buildings and repairs	1,946 06	
Equipment and furniture	483 26	
Farm and garden	515 43	
Transport, travelling expenses and freight	275 07	
Miscellaneous	242 22	
Total expenditure	9,934 01	
Excess of expenditure over receipts		1,280 77
	9,934 01	9,934 01

CECILIA JEFFREY BOARDING SCHOOL, MAN.

(Presbyterian.)

RECEIPTS.	$ cts.	$ cts.
Government grant, buildings and repairs, per capita		1,948 20
" " "		1,740 50
Contributed by Presbyterian Church :—		
For salaries		2,694 28
" steamboat		1,450 00
" " running expenses		160 00
" painting residence		215 10
Supplementary grant, maintenance, dock, travelling expenses		349 13
In clothing		800 00
To meet deficit from 1906		781 67
From other sources		503 53
Total receipts		10,642 41
EXPENDITURE.		
Deficit, March 31, 1907	818 56	
Salaries	2,694 28	
Extra labour	20 75	
Food	1,361 98	
Clothing	925 85	
Fuel and light	291 88	
Buildings and repairs	1,753 10	
House equipment	141 15	
Farm and garden	412 18	
Transport, travelling, freight and express	128 38	
Steamboat	1,450 00	
Painting residence	215 10	
Miscellaneous	359 99	
Total expenditure	10,573 20	
Balance on hand April 1, 1908	69 21	
	10,642 41	10,642 41

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

FORT ALEXANDER BOARDING SCHOOL, MAN.

(Roman Catholic).

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		4,320 00
Received from Mission		2,259 27
Total receipts		6,579 27
EXPENDITURE.		
Deficit, March 31, 1907	4,647 83	
Salaries	703 28	
Clothing	616 20	
Food	1,162 91	
Fuel and light	156 09	
Buildings and repairs	756 29	
House equipment	166 88	
Farm and garden	265 73	
Transport, travelling expenses and freight	296 34	
Extra labour	349 86	
Miscellaneous	243 86	
Total expenditure	9,359 27	
Excess of expenditure over receipts		2,780 00
	9,359 27	9,359 27

FORT FRANCES BOARDING SCHOOL, MAN.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,880 00
Paid by the Mission		777 50
Total Receipts		3,657 50
EXPENDITURE.		
Deficit, March 31, 1907	2,594 79	
Salaries	592 00	
Clothing	629 44	
Food	1,575 38	
Fuel and light	121 53	
Buildings and repairs	177 04	
House equipment	217 88	
Farm and garden	519 88	
Transport, travelling expenses, freight and express	149 91	
Extra labour	1,644 65	
Miscellaneous	343 11	
Total expenditure	8,565 61	
Excess of expenditure over receipts		4,908 11
	8,565 61	8,565 81

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con*

KENORA BOARDING SCHOOL, ONT.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,880 00
Contributed from other sources		416 39
Total receipts		3,296 39
EXPENDITURE.		
Deficit, March 31, 1907	483 77	
Salaries	308 50	
Food	1,495 51	
Clothing	492 85	
Fuel and light	133 44	
Buildings and repairs	75 05	
House equipment	345 47	
Farm and garden	407 37	
Travelling expenses and freight	115 40	
Extra labour	60 60	
Miscellaneous	89 60	
Total expenditure	4,007 56	
Excess of expenditure over receipts		711 17
	4,007 56	4,007 56

NORWAY HOUSE BOARDING SCHOOL, MAN.

(Methodist.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		6,200 00
" " repairs		964 50
" " horses and wagon		625 00
Grant from Missionary Society for deficit		3,400 00
Other sources		2,547 86
Women's Missionary Society		300 00
Total receipts		14,037 36
EXPENDITURE.		
Deficit, March 31, 1907	3,400 00	
Salaries	1,965 00	
Hardware	1,180 34	
Dry goods	1,955 90	
Groceries	2,834 61	
Freight and transportation	784 30	
Feed and seeds	274 59	
Team of horses, wagon and harness	625 00	
Crown Land and Timber Department	125 00	
Boots and rubbers	452 75	
Miscellaneous	530 86	
Drugs, stationery and books	51 07	
Total expenditure	14,179 42	
Excess of expenditure over receipts		142 06
	14,179 42	14,179 42

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

PINE CREEK BOARDING SCHOOL, MAN.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		4,708 40
Other sources		17 33
Total receipts		4,725 73
EXPENDITURE.		
Salaries	1,285 00	
Extra labour	533 05	
Clothing	930 40	
Food	1,612 45	
Fuel and light	39 15	
Buildings and repairs	341 88	
Farm and garden	715 68	
House equipment	9 00	
Freight and express	309 94	
Miscellaneous	190 66	
Total expenditure	5,967 21	
Excess of expenditure over receipts		1,241 48
	5,967 21	5,967 21

PORTAGE LA PRAIRIE BOARDING SCHOOL, MAN.

(Presbyterian)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		131 42
Government grant, per capita		1,770 00
Salaries		1,065 00
Clothing		350 00
Contributions from other sources		897 50
Total receipts		4,213 92
EXPENDITURE.		
Salaries	1,065 00	
Clothing	376 70	
Food	1,040 24	
Fuel and light	267 99	
Buildings and repairs	665 99	
House equipment	180 77	
Farm and garden	328 02	
Express, freight and travel	53 44	
Extra labour	66 50	
Miscellaneous	95 06	
Total expenditure	4,139 71	
Balance on hand, March 31, 1908	74 21	
	4,213 92	4,213 92

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

SANDY BAY BOARDING SCHOOL, MAN.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,938 80
Farm and garden		32 37
Goods		51 25
From Oblate corporation		298 10
Total receipts		3,320 52
EXPENDITURE.		
Deficit, March 31, 1907	298 08	
Salaries	1,182 50	
Clothing	587 52	
Food	1,737 14	
Fuel and light	110 23	
Buildings and repairs	110 30	
House equipment	268 45	
Farm and garden	240 34	
Transport, travelling expenses, &c	164 34	
Extra labour	131 00	
Miscellaneous	93 37	
Total expenditure	4,923 27	
Excess of expenditure over receipts		1,602 75
	4,923 27	4,923 27

COWESSESS BOARDING SCHOOL, SASK.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		3,240 00
From other sources		830 55
Total receipts		4,070 55
EXPENDITURE.		
Salaries	1,350 00	
Extra labour	72 35	
Food	937 59	
Clothing	494 46	
Fuel and light	65 20	
Buildings and repairs	226 36	
Farm and garden	344 47	
Transport, travelling expenses, freight, &c	125 58	
Miscellaneous	1,449 08	
Total expenditure	5,565 39	
Excess of expenditure over receipts, (paid by the church)		1,494 84
	5,565 39	5,565 39

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

CROWSTAND BOARDING SCHOOL, SASK.

(Presbyterian.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		108 24
Government grant, per capita		3,289 20
Foreign mission committee		2,364 75
Special government building grant		600 00
Special building grant from church		200 00
Produce of farm		857 67
Clothing contributed		550 00
Other sources		63 00
Totals receipts		8,032 86
EXPENDITURE.		
Salaries	2,544 70	
Clothing	726 55	
Food	1,094 49	
Fuel and light	480 92	
Buildings and repairs	1,372 63	
Equipment	252 99	
Farm and garden	836 66	
Travelling, freight, express and telegrams	21 05	
Extra labour	295 85	
Miscellaneous	379 91	
Total expenditure	8,005 75	
Balance on hand, March 31, 1908	27 11	
	8,032 86	8,032 86

DUCK LAKE BOARDING SCHOOL, SASK.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		9,921 64
" " for buildings and repairs		1,520 74
" " for inspector's board		5 50
Farm revenue		1,605 78
Miscellaneous receipts		1,421 63
Total receipts		14,475 29
EXPENDITURE.		
Salaries	2,769 04	
Clothing	860 56	
Food	3,923 07	
Fuel and light	424 90	
Buildings and repairs	1,026 51	
House equipment	452 41	
Farm and garden	2,529 62	
Freight and express	324 68	
Extra work	220 90	
Miscellaneous	8,512 38	
Total expenditure	21,044 07	
Excess of expenditure over receipts		6,568 78
	21.044 07	21,044 07

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

EMMANUEL COLLEGE, SASK.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		4,443 99
" " loan for travelling expenses		100 00
" " " special repairs		185 20
Imperial Bank rebate		4 85
Donations		32 50
Proceeds of farm produce		765 50
Total receipts		5,532 04
EXPENDITURE.		
Deficit, March 31, 1907	2,212 72	
Clothing	672 63	
Provisions	2,719 49	
Salaries	2,169 10	
Fuel and light	720 95	
O. H. help	111 90	
Equipment	630 96	
Repairs	103 55	
Farm and garden	68 75	
Miscellaneous	787 98	
Total expenditure	10,198 03	
Excess of expenditure over receipts		4,665 99
	10,198 03	10,198 03

FIRE HILLS BOARDING SCHOOL, SASK.

(Presbyterian.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		1,261 20
Salaries (W.F.M.S.)		1,880 00
Teacher's board		78 00
Maintenance, W.F.M.S.		90 00
Repayment of loan received in 1904 (W.F.M.S.)		398 17
Discounts, &c		135 98
Farm sales, &c		203 50
Total receipts		4,046 85
EXPENDITURE.		
Deficit, March 31, 1907	812 62	
Salaries	1,880 00	
Extra labour	144 30	
Food	761 97	
Clothing	88 10	
Fuel and light	250 65	
Buildings and repairs	47 11	
Equipment and furniture	149 28	
Farm and garden	140 86	
Travelling expenses	12 55	
Miscellaneous	129 26	
Total expenditure	4,416 70	
Excess of expenditure over receipts		369 85
	4,416 70	4,416 70

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

KEESEEKOUSE BOARDING SCHOOL, SASK.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		1,683 00
Earnings		1,015 51
Grant from church		200 00
Contributions of clothing		28 75
Total receipts		2,927 26
EXPENDITURE.		
Salaries	367 50	
Extra labour	38 62	
Food	1,060 35	
Clothing	321 80	
Fuel and light	45 98	
Buildings and repairs	109 50	
Equipment and furniture	297 75	
Farm and garden	587 58	
Travelling and freight	48 00	
Miscellaneous	97 42	
Total expenditure	2,974 50	
Excess of expenditure over receipts		47 24
	2,974 50	2,974 50

LAC LA PLONGE BOARDING SCHOOL, SASK.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		1,320 00
Various sources		172 03
Total receipts		1,492 03
EXPENDITURE.		
Deficit, March 31, 1907	1,214 40	
Salaries	400 00	
Workmen's wages	784 00	
Extra labour	91 70	
Food	1,130 40	
Clothing	117 26	
Light	38 20	
Equipment and furniture	238 26	
Transport, etc	886 84	
Miscellaneous	63 05	
Total expenditure	4,964 11	
Excess of expenditure over receipts		3,472 08
	4,964 11	4,964 11

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

LAC LA RONGE BOARDING SCHOOL, SASK

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,267 40
C. M. S. for principal's salary		600 00
W. A. for matron's salary		180 00
W. A. clothing, bedding and groceries		550 00
Private donations		296 00
Sale of goods		250 00
Total receipts		4,143 40
EXPENDITURE.		
Deficit, March 31, 1907	480 00	
Salaries	1,375 00	
Food	900 00	
Clothing	770 00	
Fuel and light	60 00	
Buildings	100 00	
Equipment and furniture	350 00	
Farm and garden	20 00	
Freight	1,000 00	
Miscellaneous	100 00	
Total expenditure	5,155 00	
Excess of expenditure over receipts		1,011 60
	5,155 00	5,155 00

MUSCOWEKUAN'S BOARDING SCHOOL, SASK.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,262 00
" " for horses slaughtered		600 00
Farm revenue		370 00
From other sources		1,139 62
Total receipts		4,371 62
EXPENDITURE.		
Deficit, March 31, 1907	1,210 18	
Salaries	686 75	
Extra labour	54 50	
Food	1,403 19	
Clothing	603 85	
Fuel and light	32 35	
Buildings and repairs	131 99	
Equiment and furniture	93 20	
Farm and garden	928 88	
Transport, travelling expenses, freight and express	162 66	
Miscellaneous	178 33	
Total expenditure	5,485 88	
Excess of expenditure over receipts		1,114 26
	5,485 88	5,485 88

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

ONION LAKE BOARDING SCHOOL, SASK.
(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,113 80
" for painting		360 80
Pupil boarders		698 40
Private donations		766 00
Exchange of provisions		235 82
Farm receipts		535 95
Total receipts		4,710 77
EXPENDITURE.		
Deficit, March 31, 1907	1,793 41	
Salaries	1,125 00	
Clothing	806 15	
Food	1,450 76	
Fuel and light	444 48	
Buildings and repairs	750 62	
House equipment	219 41	
Farm and garden	199 80	
Freight and travelling expenses	162 50	
Extra labour	29 58	
Total expenditure	6,981 71	
Excess of expenditure over receipts		2,270 94
	6,981 71	6,981 71

ONION LAKE BOARDING SCHOOL, SASK.
(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		993 60
" " repairs to buildings		56 35
" " clothing and bedding supplied on account smallpox outbreak		359 50
Provincial Government grant, salary of teacher earned in 1906		100 00
Church missionary society, salary of missionary and principal		600 00
Women's auxilliary salary of two of staff		300 00
Freighting for sisters of charity		55 68
Lumber sold " "		25 00
Sales of clothing		87 00
Sales of provisions and groceries		125 00
Receipts from farm, garden and ranch		1,279 39
Miscellaneous receipts		373 15
Total receipts		4,354 67
EXPENDITURE.		
Salaries	1,258 00	
Extra labour	460 00	
Food	1,365 15	
Clothing	710 33	
Fuel and light	295 81	
Buildings and repairs	137 89	
Equipment and furniture	26 29	
Farm and garden	101 00	
Total expenditure	4,354 47	
Balance on hand, March 31, 1908	20	
	4,354 67	4,354 67

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

ROUND LAKE BOARDING SCHOOL, SASK.

(Presbyterian).

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,246 00
Presbyterian Church, for salaries		2,110 00
Received for wheat sold		320 00
Contributions		14 00
W. F. M. S., furnishings		85 00
Received for board		150 00
W. F. M. S., clothing		500 00
Farm produce consumed		690 00
Balance on hand, March 31, 1907		2 68
Total receipts		6,117 68
EXPENDITURE.		
Salaries	2,017 00	
Clothing	697 55	
Food	1,583 94	
Fuel and light	232 90	
Repairs and furnishings	116 40	
Farm and garden	623 85	
Freight	26 00	
Extra labour	498 00	
Miscellaneous	130 05	
Total expenditure	5,925 69	
Balance on hand, March 31, 1908	191 99	
	6,117 68	6,117 68

THUNDERCHILD'S BOARDING SCHOOL, SASK.

(Roman Catholic).

RECEIPTS.	$ cts.	$ cts.
Cash on hand, March 31, 1907		93 08
Government grant, per capita		1,435 20
" for buildings		1,541 92
" for furnaces		500 00
Non-treaty pupil boarders		486 75
Farm and garden		148 00
Clothing (gifts)		134 00
Loan		200 00
Exchange		13 55
Total receipts		4,552 50
EXPENDITURE.		
Salaries	175 00	
Extra labour	15 25	
Food	1,007 91	
Clothing	427 37	
Fuel and light	136 20	
Buildings and furnaces	2,312 06	
Equipment and furniture	205 66	
Farm and garden	28 25	
Travelling, freight and express	84 09	
Paid on account of debt	100 00	
Miscellaneous	56 75	
Total expenditure	4,548 54	
Balance on hand, March 31, 1908	3 96	
	4,552 50	4,552 50
DEBT ACCOUNT.		
Amount of deficit, March 31, 1907	2,233 60	
Paid on account of debt	100 00	
Debt, March 31, 1908	2,133 60	

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con*

BLOOD BOARDING SCHOOL, ALBERTA.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,620 97
The church, etc		1,758 30
Bank note for $500 discounted		493 10
Value of clothing in bales		720 00
Total receipts		5,592 37
EXPENDITURE.		
Balance, April 1, 1907	646 51	
Salaries	1,321 25	
Food	1,625 63	
Clothing	1,029 63	
Fuel and light	537 90	
Repairs	119 39	
Furnishing and equipment	116 80	
Farm and garden (stables, etc.)	378 14	
Miscellaneous	196 18	
Total expenditure	5,971 43	
Excess of expenditure over receipts		379 06
	5,971 43	5,971 43

BLOOD BOARDING SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,901 34
Church grant		1,350 00
Contributions from other sources		737 65
Total receipts		4,988 99
EXPENDITURE.		
Deficit, March 31, 1907	747 51	
Salaries	1,350 00	
Fuel and light	391 10	
Clothing	459 79	
Food	1,691 99	
Buildings and repairs	198 35	
Equipment and furniture	370 76	
Total expenditure	5,209 50	
Excess of expenditure over receipts		220 51
	5,209 50	5,209 50

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

BLUE QUILLS BOARDING SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,986 71
From other sources		61 20
Donations		950 00
Total receipts		3,997 91
EXPENDITURE.		
Deficit, March 31, 1907	92 57	
Salaries	950 00	
Extra labour	427 60	
Food	952 90	
Clothing	614 39	
Fuel and light	397 59	
Buildings and repairs	127 47	
Equipment and furniture	263 76	
Farm and garden	187 49	
Transport, travelling expenses, freight and express	192 90	
Miscellaneous	126 30	
Total expenditure	4,332 97	
Excess of expenditure over receipts		335 06
	4,332 97	4,332 97

CROWFOOT BOARDING SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		1,629 00
" for repairs		300 00
Church grant and donations		850 00
Total receipts		2,779 00
EXPENDITURE.		
Deficit, March 31, 1907	14 40	
Salaries	500 00	
Food	1,020 45	
Clothing	622 50	
Fuel and light	260 25	
Equipment and furniture	141 30	
Farm and garden	63 00	
Miscellaneous	54 10	
Buildings and repairs	375 50	
Total expenditure	3,051 50	
Excess of expenditure over receipts		272 50
	3,051 50	3,051 50

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

ERMINESKIN'S BOARDING SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		3,600 00
Contributions from other sources		120 00
Total receipts		3,720 00
EXPENDITURE.		
Deficit on main building	3,500 00	
" laundry	700 00	
Extra labour	148 30	
Food	1,603 20	
Clothing	567 13	
Fuel and light	242 40	
Buildings and repairs	65 62	
House equipment	602 95	
Farm and garden	101 70	
Travelling, freight, etc	27 45	
Salaries	150 00	
Miscellaneous	159 05	
Total expenditure	7,867 80	
		4,147 80
Excess of expeaditure over receipts	7,867 80	7,867 80

LESSER SLAVE LAKE BOARDING SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		3,484 00
EXPENDITURE.		
Food	3,377 45	
Clothing	857 64	
Fuel	720 00	
Total expenditure	4,955 09	
		1,471 09
Excess of expenditure over receipts paid by R. C. Mission	4,955 09	4,955 09

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

*LESSER SLAVE LAKE BOARDING SCHOOL, ALBERTA.

(Church of England.)

EXPENDITURE.	$ cts.	$ cts.
Food	493 60	
Fuel and light	113 00	
Repairs	24 00	
House equipment	51 35	
Extra labour	84 50	
Salaries	816 64	
Total expenditure		1,583 09

*Statement of receipts not given.

McDOUGALL ORPHANAGE, ALBERTA.

(Methodist.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		215 78
Missionary Society		3,073 40
Indian Department, per capita grant		2,103 60
" repairs, etc		566 00
Blacksmith shop		433 68
Sale of supplies		166 49
All other sources		304 13
		6,863 08

EXPENDITURE.	$ cts.	$ cts.
Salaries	2,513 20	
Clothing, $644.06; provisions, $670.74	1,314 80	
Fuel and light, $118.94; buildings and repairs, $792.12	811 06	
House equipment, $219.59; farm and garden, $980.31	1,200 90	
Extra labour	55 50	
Blacksmith shop and miscellaneous	674 62	
Travelling, freight and express	212 76	
Balance on hand	80 24	
Total expenditure	6,863 08	6,863 08

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con*

OLD SUN'S BOARDING SOHOOL, ALBERTA.

(Church of England).

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,294 80
The church, etc		1,940 67
Value of clothing in bales		640 00
Total receipts		4,875 47
EXPENDITURE.		
Balance, April 1, 1907	48 93	
Salaries	1,336 50	
Food	802 59	
Clothing	646 65	
Fuel and light	312 00	
Repairs	40 30	
Furnishing and equipment	111 80	
Farm and garden (stables, etc.)	133 05	
Miscellaneous	187 35	
Part repayment of Loan, and interest	1,123 83	
Bank interest	38 35	
Total expenditure	4,781 35	
Balance on hand, March 31, 1908	94 12	
	4,875 47	4,875 47

PEIGAN BOARDING SCHOOL, ALBERTA.

(Church of England).

RECEIPTS.	$ cts.	$ cts.
Balance on hand, April 1, 1907		257 15
Government grant, per capita		1,669 20
The church, etc		1,024 43
Value of clothing in bales		460 00
Total receipts		3,410 78
EXPENDITURE.		
Salaries	726 62	
Food	1,408 87	
Clothing	582 10	
Fuel and light	304 25	
Repairs	125 40	
Furnishing and equipment	95 19	
Farm and garden (stables, etc.)	103 25	
Miscellaneous	123 33	
Total expenditure	3,469 01	
Excess of expenditure over receipts		58 23
	3,469 01	3,469 01

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con'*

PEIGAN BOARDING SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Cash on hand, March 31, 1907		74 25
Government grant, per capita		2,122 20
" for buildings and repairs		600 00
Received from other sources		1,441 35
Total receipts		4,237 80
EXPENDITURE.		
Deficit, March 31, 1907	674 02	
Salaries	1,350 00	
Food	1,395 11	
Clothing	249 00	
Fuel and light	261 00	
Buildings and repairs	636 35	
House equipment	71 35	
Farm and garden	65 50	
Transport, travelling expenses, freight, etc	78 00	
Miscellaneous	105 15	
Total expenditure	4,885 48	
Excess of expenditure over receipts		647 68
	4,885 48	4,885 48

SARCEE BOARDING SCHOOL, ALBERTA.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		832 80
The church, etc		638 70
Value of clothing in bales		220 00
Total receipts		1,691 50
EXPENDITURE.		
Balance, April 1, 1907	7 54	
Salaries	586 00	
Food	598 26	
Clothing	243 85	
Fuel and light	339 02	
Repairs	73 07	
Furnishing and equipment	14 60	
Farm and garden (stables, etc.)	140 78	
Miscellaneous	105 47	
Total expenditure	2,108 59	
Excess of expenditure over receipts		417 09
	2,108 59	2,108 59

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

ST. ALBERT BOARDING SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		4,702 20
Donations		194 45
Total receipts		4,896 65
EXPENDITURE.		
Wages paid to farmers	980 60	
" baker	250 00	
Provisions	990 15	
Clothing	535 75	
Fuel and light	375 30	
Miscellaneous	35 00	
Buildings and repairs	3,286 79	
Deficit, March 31, 1907	24 17	
Total expenditure	6,477 76	
Excess of expenditure over receipts		1,581 11
	6,477 76	6,477 76

AHOUSAHT BOARDING SCHOOL, B.C.

(Presbyterian.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		201 29
Government grant, per capita		1,500 00
Presbyterian Church grant for maintenance		500 00
" " salaries		1,312 50
" " buildings		30 00
Government grant for water supply		200 00
Contributions from other sources		173 65
W.F.M.S. supplies furnished		567 00
Total receipts		4,484 44
EXPENDITURE.		
Salaries	1,500 00	
Food	1,551 89	
Clothing	555 70	
Fuel and light	33 75	
Buildings and repairs	263 09	
Freight, etc	136 15	
Miscellaneous	237 93	
Total expenditure	4,278 51	
Balance on hand, March 31, 1908	205 93	
	4,484 44	4,484 44

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908.—*Con.*

ALBERNI BOARDING SCHOOL, B.C.

(Presbyterian.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,477 50
Grant from W.F.M.S. of Presbyterian Church		1,869 50
Stock and produce		134 60
Other receipts		6 08
Clothing from W.F.M.S. of Presbyterian Church		500 00
Total receipts		4,987 68
EXPENDITURE.		
Deficit, March 31, 1907	307 23	
Salaries	1,670 00	
Extra labour	190 00	
Food	1,741 79	
Clothing	590 45	
Fuel and light	77 70	
Buildings and repairs	12 60	
Equipment and furniture	98 75	
Farm and garden	250 76	
Miscellaneous	371 49	
Total expenditure	5,310 77	
Excess of expenditure over receipts		323 09
	5,310 77	5,310 77

PORT SIMPSON GIRLS' HOME, B.C.

(Methodist.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		225 81
Government grant, per capita		2,100 00
Cash from Women's Missionary Society Methodist Church		3,410 00
Cash from other sources		17 75
Total receipts		5,753 56
EXPENDITURE.		
Salaries	1,700 00	
Food	1,381 53	
Clothing	473 89	
Fuel and light	436 60	
Buildings and repairs	484 25	
Equipment and furniture	336 33	
Furnace	400 00	
Garden	23 00	
Transport, travelling expenses and freight	367 31	
Miscellaneous	133 25	
Total expenditure	5,736 16	
Balance on hand, March 31, 1908	17 40	
	5,753 56	5,753 56

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

SECHELT BOARDING SCHOOL, B.C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		2,514 50
Other sources		246 50
Total receipts		2,761 00
EXPENDITURE.		
Deficit, March 31, 1907	336 80	
Extra labour	16 50	
Food	2,171 50	
Clothing	142 00	
Fuel and light	53 60	
Buildings and repairs	87 42	
Equipment and furniture	136 45	
Farm and garden	60 85	
Transport, travelling expenses, freight	121 15	
Miscellaneous	186 81	
Total expenditure	3,313 08	
Excess of expenditure over receipts		552 08
	3,313 08	3,313 08

SQUAMISH BOARDING SCHOOL, B.C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Cash on hand, March 31, 1907		10 00
Government grant, per capita		3,000 00
Various sources		2,000 00
From the church		153 55
EXPENDITURE.		
Wages	260 00	
Clothing	364 20	
Food	2,301 35	
Fuel and light	236 18	
Buildings and repairs	214 10	
House equipment	91 60	
Farm and garden	33 30	
Transport and travelling expenses	224 65	
Miscellaneous	1,438 17	
	5,163 55	5,163 55

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

ST. MARY'S BOARDING SCHOOL, B.C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		3,600 00
From farm and garden		1,425 00
Mission grant		600 00
Extra grant for water system		2,250 00
Other sources		1,220 00
Total receipts		9,095 00
EXPENDITURE.		
Deficit, March 31, 1907	1,541 00	
Salaries	1,560 00	
Food	4,000 00	
Clothing	140 00	
Fuel and light	645 00	
Extra labour	525 00	
New buildings and fences	750 00	
Equipment and furniture	225 50	
Farm and garden	360 00	
Freight and express	80 00	
New water system	2,083 82	
Miscellaneous	150 00	
Total expenditure	12,060 32	
Excess of expenditure over receipts		2,965 32
	12,060 32	12,060 32

YALE (ALL HALLOWS) BOARDING SCHOOL, B.C.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		17 26
Government grant, per capita		1,390 00
Donations from Canada		277 20
" " England		183 47
Scholarship, S.P.C.K		120 00
Other sources		450 00
Sales		34 55
Totals receipts		2,472 48
EXPENDITURE.		
Salaries	344 00	
Clothing	4 25	
Food	1,001 86	
Fuel and light	230 40	
Buildings and repairs	160 45	
House equipment	27 65	
Farm and garden	35 85	
Transport, travelling expenses, freight, etc	176 55	
Extra labour	257 32	
Miscellaneous	160 80	
Total expenditure	2,399 13	
Balance on hand, March 31, 1908	73 35	
	2,472 48	2,472 48

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

MOHAWK INSTITUTE, ONT.

(Undenominational.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		5,957 00
Received from industrial departments		1,997 44
Cash receipts from sales		3,526 79
Total receipts		11,481 23
EXPENDITURE.		
Salaries	3,585 78	
Provisions	2,393 01	
Clothing	1,276 55	
Washing, heating, lighting	1,338 39	
Furniture, bedding, house sundries	387 82	
Repairs and insurance	103 56	
Printing, postage, office expenses	30 13	
Medical expenses	234 24	
Travelling expenses	12 55	
Sundries, school requisites, prizes	314 57	
Materials and wages for industrial departments	4,619 86	
Total expenditure	14,296 46	
Excess of expenditure over receipts paid by New England Company		2,815 23
	14,296 46	14,296 46

MOUNT ELGIN INDUSTRIAL SCHOOL, ONT.

(Methodist.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		36 24
Government grant, per capita		5,871 00
Methodist Missionary Society		129 00
Insurance paid on contents of boys' play house and new barn		389 35
Amount contributed by the government for authorized repairs		3,000 00
From sale of live stock		6,739 67
Amount realized from house and garden		143 88
Loans		261 21
Total receipts		16,570 35
EXPENDITURE.		
Salaries	3,629 32	
Extra labour	331 69	
Food (other than raised on the farm)	1,738 02	
Clothing	1,160 46	
Fuel and light	654 42	
Special improvements authorized by the department	3,632 17	
Buildings and repairs	1,141 31	
Equipment and furniture	11 50	
Transport, travelling expenses, freight and express	200 48	
Miscellaneous	7,349 16	
Total expenditure	19,848 53	
Excess of expenditure over receipts		3,279 18
	19,848 53	19,848 53

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

SHINGWAUK AND WAWANOSH HOMES, ONT.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Per capita grant, from Indian Department :–		
For boys	2,160 00	
For girls	1,466 00	3,626 00
Special grant from Indian Department		2,076 90
Contributions, Great Britain	1,231 49	
" Canada	2,457 43	3,688 92
Total receipts		9,391 82
Deficit, March 31, 1908		2,006 86
		11,398 68
EXPENDITURE.		
Salaries, institution staff only		2,535 50
Food		3,198 75
Clothing		833 75
Fuel, light and water		1,296 33
Teaming and horse hire		119 50
Repairs to buildings		351 16
Equipment and furniture		164 97
Office expenses		281 82
Travelling expenses and amusements		172 20
Hospital and medical attendance		220 31
Pocket money		121 89
Laundry and house expenses		265 84
Miscellaneous		75 13
Total expenditure		9,637 15
Loss on trades		128 50
Deficit, March 31, 1907		1,633 03
		11,398 68

WIKWEMIKONG INDUSTRIAL SCHOOL, ONT.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		8,562 00
From other sources		5,509 05
EXPENDITURE.		
Salaries	2,037 43	
Food	5,172 79	
Clothing	1,528 17	
Fuel and light	1,066 93	
Buildings and repairs	790 02	
Equipment and furniture	1,078 32	
Farm and garden	1,142 15	
Transport, travelling expenses and freight	168 78	
Miscellaneous	1,086 46	
	14,071 05	14,071 05

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

BRANDON INDUSTRIAL SCHOOL, MAN.

(Methodist).

RECEIPTS.	$ cts.	$ cts.
Government grant and Methodist Missionary Society		11,400 00
Inspector's board		9 25
Two years transport of pupils		984 23
Farm products		504 25
Live stock		502 45
Provisions sold		121 85
Dry goods sold		59 58
Fuel sold		130 00
Sunday school		23 00
Balance, March 31, 1907		121 05
Total receipts		13,855 66
EXPENDITURE.		
Salaries	5,250 50	
Clothing	2,248 20	
Food	2,615 08	
Fuel and light	1,393 10	
Buildings and repairs	176 81	
House equipment	318 30	
Farm and garden	817 26	
Freight, express and transport	549 96	
Extra labour	209 65	
Miscellaneous	232 05	
Total expenditure	13,810 91	
Balance on hand, March 31, 1908	44 75	
	13,855 66	13,855 66

ELKHORN INDUSTRIAL SCHOOL, MAN.

(Undenominational).

RECEIPTS.	$ cts.	$ cts.
Government grant		21,975 12
Farm receipts, &c. (cash)		776 25
J. Mooney, (rebate drug account)		1 48
Total receipts		22,752 85
EXPENDITURE.		
Salaries	5,854 56	
Clothing	2,434 69	
Food	4,517 72	
*Fuel and light	5,547 24	
Buildings and repairs	2,424 84	
House equipment	618 69	
Farm and garden	392 32	
Transport, etc	435 82	
Extra labour	93 35	
Miscellaneous	433 62	
Total expenditure	22,752 85	22,752 85

*N.B.—The above item for fuel and light includes the supply of tamarack for next winter.

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

BATTLEFORD INDUSTRIAL SCHOOL, SASK.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		97 83
Government grant, per capita		8,272 15
" " buildings and repairs		476 00
" " new desks		255 30
" " drugs, medical attendance, etc		411 43
Other sources		4,264 80
Total receipts		13,777 51
EXPENDITURE.		
Salaries	3,727 50	
Extra labour	63 65	
Food	5,034 50	
Clothing	1,363 40	
Fuel and light	1,372 45	
Buildings and repairs	490 68	
Equipment and furniture	688 29	
Farm and garden	769 68	
Transport, travelling expenses, freight, etc	249 15	
Miscellaneous	441 71	
Total expenditure	14,201 01	
Excess of expenditure over receipts		423 50
	14,201 01	14,201 01

QU'APPELLE INDUSTRIAL SCHOOL, SASK.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita 1907-08		25,716 00
" " for medical attendance, stationery, postage, etc		1,169 73
Cash earned by shops and other sources		7,451 30
Total receipts		34,337 03
EXPENDITURE.		
Deficit, March 31, 1907	4,723 22	
Salaries paid out of per capita grant	8,500 30	
" above "	600 00	
Food	7,626 47	
Clothing	3,948 47	
Fuel and light	2,531 45	
Buildings and repairs	2,587 20	
Equipment and furniture	910 49	
Farm and garden	1,402 64	
Travelling expenses, freight and express	2,455 75	
Miscellaneous, out of per capita grant	5,485 04	
" above "	569 73	
Total expenditure	41,340 76	
Excess of expenditure over receipts		7,003 73
	41,340 76	41,340 76

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

REGINA INDUSTRIAL SCHOOL, SASK.

(Presbyterian.)

RECEIPTS.	$ cts.	$ cts.
Per capita grant, Dominion Government		8,110 81
Special grant, F. M. committee		1,000 00
Stamps		40 00
Extra labour		73 30
Repair account		62 25
Residence foundation and painting—grant		425 00
Board of workmen		143 35
Donations, clothing, toys, &c., W. . M. Society		900 00
Donations—cash		10 00
Fees, non-treaty pupil		60 00
Proceeds, farm and garden		3,023 67
"Progress" subscriptions		53 50
Miscellaneous		21 35
Total receipts		13,923 23
EXPENDITURE.		
Clothing	465 68	
Food	2,348 90	
Fuel and light	2,417 15	
Buildings and repairs	156 88	
House equipment	147 71	
Travelling expenses	296 10	
Extra labour	103 30	
Miscellaneous	251 73	
Salaries	4,704 49	
Farm and garden	1,780 40	
Repairs, principal's residence	425 00	
Total expenditure	13,097 34	
Balance on hand, March 31, 1908	825 89	
	13,923 23	13,923 23

CALGARY INDUSTRIAL SCHOOL, ALDERTA.

(Undenominational.)

EXPENDITURE.	$ cts.	$ cts.
Salaries	2,208 37	
Food	435 53	
Clothing	113 70	
Management	300 18	
		3,057 78

NOTE—All expenses in conneetion with this school are paid by the government.

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

RED DEER INDUSTRIAL SCHOOL, ALBERTA.

(Methodist.)

RECEIPTS.	$ cts.	$ cts.
Government grant		6,525 96
Contributions from other sources		7,577 30
EXPENDITURE.		
Deficit, March 31, 1907	64 06	
Salaries	4,478 57	
Extra labour	565 65	
Food	2,189 05	
Clothing	1,223 49	
Fuel and light	192 56	
Buildings and repairs	600 66	
Drugs and postage	76 94	
Equipment and furniture	233 08	
Farm and garden	3,075 80	
Transport, travelling expenses, freight and express	426 00	
Miscellaneous	904 39	
Balance in bank, March 31, 1908	73 01	
	14,103 26	14,103 26

ST. JOSEPH'S INDUSTRIAL SCHOOL, ALBERTA.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		8,429 35
" " for repairs		158 35
" " steam heating, girls' building		3,386 18
Farm produce and live stock sold		5,298 90
Total receipts		17,272 78
EXPENDITURE.		
Unpaid accounts, March 31, 1907	3,841 99	
Salaries	5,139 78	
Food	3,287 55	
Clothing	1,259 12	
Fuel and light	989 84	
Farm	846 07	
Live stock	448 45	
Repairs	408 66	
Steam heating, girls' building	3,386 18	
Miscellaneous	825 93	
	20,433 57	
Less new goods, March 31, 1908	1,614 35	
Total expenditure	18,819 22	
Excess of expenditure over receipts		1,546 44
	18,819 22	18,819 22

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

ALERT BAY INDUSTRIAL SCHOOL, B.C.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Cash on hand, March 31, 1907		1 59
Government grant, per capita		2,793 94
Grant Church Missionary Society		275 00
Board of officers		433 00
Labour of boys and sale of their work		218 53
Sale of beef		27 80
Total receipts		3,749 86
EXPENDITURE.		
Salaries	1,349 25	
Extra labour	39 25	
Food	1,403 28	
Clothing	814 31	
Fuel	60 25	
Repairs	87 30	
Equipment	15 00	
Transport	22 50	
Miscellaneous	185 25	
Total expenditure	3,976 39	
Excess of expenditure over receipts		226 53
	3,976 39	3,976 39

CLAYOQUOT INDUSTRIAL SCHOOL, B.C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		6,483 75
Amount of contributions from other sources		796 60
Receipts from sales of needlework		79 75
Total receipts		7,360 10
EXPENDITURE.		
Deficit, March 31, 1907	3,567 80	
Salaries	2,015 00	
Extra labour	73 00	
Food	2,549 35	
Clothing	1,121 45	
Fuel and light	124 20	
Buildings and repairs	710 95	
Equipment and furniture	448 95	
Farm and garden	491 35	
Transportation	324 15	
Miscellaneous	826 45	
Total expenditure	12,252 65	
Excess of expenditure over receipts		4,892 55
	12,252 65	12,252 65

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

COQUALEETZA INDUSTRIAL SCHOOL, B.C.

(Methodist.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		108 28
Government grant, per capita		9,425 00
Amount from other sources		2,375 86
Women's Missionary Society		868 00
Total receipts		12,777 14
EXPENDITURE.		
Salaries	3,730 50	
Food	3,755 46	
Clothing	1,014 15	
Fuel and light	540 70	
Buildings and repairs	565 15	
Equipment and furniture	1,170 47	
Farm and garden	369 85	
Transportation and travelling	282 50	
Miscellaneous	1,134 16	
Total expenditure	12,562 94	
Balance on hand, March 31, 1908	214 20	
	12,777 14	12,777 14

KAMLOOPS INDUSTRIAL SCHOOL, B.C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		234 22
Government grant, per capita		6,500 00
From other sources		9 88
Total receipts		6,744 10
EXPENDITURE.		
Salaries	2,700 00	
Food	1,855 04	
Clothing	739 88	
Fuel and light	198 40	
Buildings and repairs	138 54	
Equipment and furniture	290 18	
Farm and garden	181 02	
Freight and express	26 80	
Miscellaneous	324 56	
Total expenditure	6,454 42	
Balance on hand, March 31, 1908	289 68	
	6,744 10	6,744 10

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

KOOTENAY INDUSTRIAL SCHOOL, B.C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		6,500 00
From other sources		107 00
Total receipts		6,607 00
EXPENDITURE.		
Deficit, March 31, 1907	165 37	
Salaries	1,027 45	
Food	2,457 66	
Clothing	1,523 51	
Repairs	273 97	
Furniture	118 80	
Miscellaneous	1,491 34	
Total expenditure	7,058 10	
Excess of expenditure over receipts		451 10
	7,058 10	7,058 10

KUPER ISLAND INDUSTRIAL SCHOOL, B C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		6,500 00
Grant for barn		300 00
From other sources		104 20
Total receipts		6,904 20
EXPENDITURE.		
Deficit, March 31, 1907	281 05	
Salaries	2,990 00	
Extra labour	103 35	
Food	2,116 38	
Clothing	784 00	
Fuel and light	229 50	
Buildings and repairs	484 35	
Equipment and furniture	670 55	
Farm and garden	152 21	
Transport	80 56	
Miscellaneous	67 55	
Lumber for barn	300 00	
Total expenditure	8,259 50	
Excess of expenditure over receipts		1,355 30
	8,259 50	8,259 50

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

LYTTON INDUSTRIAL SCHOOL, B.C.

(Church of England.)

RECEIPTS.	$ cts.	$ cts.
Balance on hand, March 31, 1907		600 51
Government grant, per capita		3,447 08
New England Company		10,604 61
Farm produce sold		1,280 96
Total receipts		15,933 16
EXPENDITURE.		
Salaries	2,409 11	
Clothing	708 89	
Food	1,358 70	
Fuel and light	370 92	
Buildings and repairs	5,195 78	
House equipment	300 17	
Farm and garden	1,042 01	
Transport, travelling expenses, freight, etc	346 99	
Extra labour	2,030 04	
Miscellaneous	465 87	
Total expenditure	14,228 48	
Balance on hand, March 31, 1908	1,704 68	
	15,933 16	15,933 16

METLAKATLA INDUSTRIAL SCHOOL, B.C.

(Church of England.)

RECEIPTS.	$ cts	$ cts.
Government grant, per capita		2,623 89
Provincial government, refund		34 00
Work done by instructor and pupils		68 25
Fuel sold		54 20
Food, potatoes, etc., sold		63 51
Post Office Department, rent		19 00
Dr. Curry, rent		23 00
Miscellaneous articles sold		14 75
Contributions		19 00
Refund		58 15
Receipts for board		58 50
From the bishop of the diocese		700 00
Government payments of various accounts		1,040 37
EXPENDITURE.		
Deficit, March 31, 1907	1,137 03	
Salaries	1,454 50	
Extra labour	281 05	
Clothing	247 30	
Food	1,026 10	
Fuel and light	275 10	
Buildings and repairs	27 70	
Equipment	100 35	
Transport	123 71	
Miscellaneous	103 78	
	4,776 62	4,776 62

STATEMENT of Receipts and Expenditure for the fiscal year ended March 31, 1908—*Con.*

WILLIAMS LAKE INDUSTRIAL SCHOOL, B.C.

(Roman Catholic.)

RECEIPTS.	$ cts.	$ cts.
Government grant, per capita		6,500 00
Contributions in clothing		75 00
Contributed by corporation of O.M.I.		300 00
Total receipts		6,875 00
EXPENDITURE.		
Deficit, March 31, 1907	4,716 06	
Interest on loan	150 00	
Salaries	2,100 00	
Food	2,635 00	
Clothing	523 00	
Fuel and light	80 00	
Equipment and furniture	75 00	
Freight and express	146 00	
Miscellaneous	25 00	
Total expenditure	10,450 06	
Excess of expenditure over receipts		3,575 06
	10,450 06	10,450 06

STATEMENT of Day Schools in the Dominion (from which Returns

School.	Reserve.	Agency.	Teacher.	Denomination.
ONTARIO.				
*Abitibi	On Lake Abitibi.	Treaty No. 9	Mrs. Jno. R. Simpson	Roman Catholic
Albany River, (C.E)	At Fort Albany	" 9	W. Haythornthwaite	Church of England
Alnwick	Alnwick	Alnwick	Francis J. Joblin	Methodist
Back Settlement	Caradoc	Caradoc	Lyman W. Fisher	Undenominational
Bear Creek	"	"	Miss Nettie E. Lockwood	"
Cape Croker	Cape Croker	Cape Croker	Miss Mary Moffitt	"
Christian Island	Christian Island	Penetanguishene	Rev. J. Wilson, B. A.	Methodist
†Fort William (Boys)	Fort William	Port Arthur	Sr. M. Ambrose	Roman Catholic.
† " (Girls)	"	"	" "	"
French Bay	Saugeen	Saugeen	T. J. Wallace	Undenominational
Garden River (R.C)	Garden River	Sault Ste. Marie	Rev. J. A. Drolet, S.J.	Roman Catholic
" (C.E.)	"	" "	L. F. Hardyman	Church of England
Garden Village	Nipissing	Sturgeon Falls	F. LeTonturier	Roman Catholic.
Georgina Island	Georgina Island	Georgina Island	J. H. Prosser	Methodist
Gibson	Watha	Parry Sound	William Kendall	"
Golden Lake	Golden Lake	Golden Lake	Miss L. M. Schruder	Roman Catholic
‡Goulais Bay	Goulais Bay	Sault Ste. Marie	Miss Jeannie McDermott	"
Graham, S.S. No. 5	At Naughton	Manitowaning	Miss Mary F. Neaphy	Undenominational
¶Grand Bay	Lake Nipigon	Port Arthur	Miss Benna Fuller	Church of England
Henvey Inlet	Henvey Inlet	Parry Sound	Joseph Partridge	Undenominational
Hiawatha	Rice Lake	Rice Lake	Miss J. R. Waddell	"
Kettle Point	Kettle Point	Sarnia	Mrs. Angus George	"
Lake Helen	Red Rock	Port Arthur	Miss Alice Barker	Roman Catholic
Long Lake	Long Lake	"	Miss Minnie Watagan	"
Mattawa	At Mattawa		Sr. St. Gregory	"
Michipicoten	Michipicoten	Sault Ste. Marie	Miss Katie O'Connor	"
§Missinaibi	At Missinaibi	" "	Reginald H. Ferris	Undenominational
Mission Bay (Squaw Bay)	Fort William	Port Arthur	Jerry Alix	Roman Catholic
**Mississagi River	Manitoulin Island.	Thessalon	Miss Annie J. Kehoe	"
Moraviantown	Moravian	Moravian	Miss Mary M. Ross	Undenominational
Moose Fort	At Moose Fort	Treaty No. 9	Miss Lucy J. Barker	Church of England
Mud Lake	Mud Lake	Rice Lake	Alfred McCue	Undenominational
Muncey	Caradoc	Caradoc	John L. Case	"
New Credit	New Credit	New Credit	Miss L. Mitchell	"
Nipissing	Nipissing.	Sturgeon Falls	Miss Agnes Kelly	Roman Catholic
Oneida No. 2	Oneida	Caradoc	Levi Williams	Church of England
" No. 3	"	"	Mrs. C. A. Vollick	Methodist
Pic River	Pic River	Port Arthur	Mrs. Adele Wissüan.	Roman Catholic
Port Elgin	Cape Croker	Cape Croker	Thomas Jones	Undenominational
Rama	Rama	Rama	Miss E. M. McBain	Methodist
River Settlement	Caradoc	Caradoc	Joseph Fisher	Undenominational
Ryerson	Parry Island	Parry Sound	Miss J. E. Armour	"

*Open during the summer only. †The day schools at Fort William closed from June 30, 1907. ‡Re-opened January 27, 1908, having been closed since December 31, 1906. Indian children attend white school. ¶Reopened January 2, 1908, having been closed for several years. §Indian children attend white school. Department pays 50 cents (per cap.) per month on average attendance. **Reopened January 2, 1908, having been closed since December 31, 1904.

SESSIONAL PAPER No. 27

STATEMENT.

h e ɔ ɐɜn received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund Paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												Ontario.
150 00	Vote	38	26	64	39	62	2					*Abitibi
200 00	"	23	22	45	18	28	10	7				Albany River (C.E.)
300 00	Band	13	16	29	17	13	6	8	1	1		Alnwick
300 00	Band, $200; Vote, $100	15	11	26	12	12	7	5	2			Back Settlement
300 00	Band, $200; Vote, $100	7	7	14	5	11	1		1	1		Bear Creek
400 00	Band	20	13	33	21	14	3	10	3	3		Cape Croker
300 00	"	21	22	43	15	7	7	8	17	4		Christian Island
600 00	Vote	3		3	2	2	1					†Fort William (Boys)
			6	6	3	3	1	2				" (Girls)
400 00	Band	17	12	29	20	9	13	4	3			French Bay
600 00	Band, $300; Vote, $ 300	26	36	62	25	34	16	9	3			Garden River (R.C.)
400 00	Band	17	12	29	12	13	4	5	7			" (C.E.)
300 00	"	14	14	28	18	11	7	10				Garden Village
300 00	Band, $150; Vote, $150	10	3	13	7	2	6		3	2		Georgina Island
300 00	Vote	6	17	23	10	6	11	5		1		Gibson
350 00	"	12	14	26	13	15	3	5	3			Golden Lake
300 00	"	9	15	24	17	13	6	5				‡Goulais Bay
150 00	"	2	2	4	2	1	1		2			Graham, S.S. No. 5
300 00	"	6	4	10	7	10						Grand Bay
300 00	Band, $100; Vote, $200	5	7	12	7	10	1	1				Henvey Inlet
100 00	Band	5	6	11	6	9	1	1				Hiawatha
300 00	"	8	11	19	10	12	4	3				Kettle Point
300 00	Vote	9	12	21	8	14	3	4				Lake Helen
300 00	"	12	17	29	9	25	4					Long Lake
200 00	"	18	23	41	29	21	6	9	5			Mattawa
300 00	"	4	6	10	7	2	2	3	3			Michipicoten
	"	10	11	21	11	17	2	2				§Missinaibi
300 00	"	9	8	17	9	12	5					Mission Bay (Squaw Bay)
300 00	"	15	14	29	10	10	13	4	2			**Mississagi River
400 00	Band	26	22	48	23	13	9	13	9	4		Moraviantown
200 00	Vote	34	33	67	29	53	5	3	5	1		Moose Fort
300 00	Band	13	13	26	14	11	6	4	5			Mud Lake
300 00	Vote	11	10	21	8	13	2	5			1	Muncey
325 00	Band	18	10	28	13	7	6	8	5	2		New Credit
300 00	"	11	8	19	8	12	2	2	3			Nipissing
300 00	Vote	9	13	22	12	16	3	1	2			Oneida No. 2
300 00	"	23	9	32	20	21	5	4	2			" No. 3
300 00	"	9	7	16	12	12	4					Pic River
300 00	Band	16	10	26	9	10	5	4	3	4		Port Elgin
300 00	Band, $125; Vote, $175	24	26	50	27	22	5	6	8	9		Rama
300 00	Band	16	17	33	11	18	3	8	4			River Settlement
300 00	"	10	12	22	9	8	6	4	4			Ryerson

SCHOOL

STATEMENT of Day Schools in the Dominion (from which

School.	Reserve.	Agency.	Teacher.	Denomination.
ONTARIO—*Concluded.*				
Sagamook	Spanish River	Thessalon	Miss Emily Frawley	Roman Catholic
Saugeen	Saugeen	Saugeen	Miss Helen Ruxton	Undenominational
Scotch Settlement	"	"	John Burr	"
Serpent River	Serpent River	Thessalon	Mrs. J. H. McKay	Roman Catholic
*Shannonville	At Shannonville	Tyendinaga	Miss L. P. Hinchey	Undenominational
Shawanaga	Shawanaga	Parry Sound	Miss Mae M. Hare	"
Sheguiandah	Sheguiandah	Manitowaning	F. W. Major	Church of England
Sheshegwaning	Sheshegwaning	Gore Bay	Miss Adèle Duhamel	Roman Catholic
Sidney Bay	Cape Croker	Cape Croker	Miss Eva M. McIver	Undenominational
Six Nations No. 1	Six Nations	Six Nations	Maude H. Hall	"
" No. 2	"	"	John Clark (Princ.), L. Roy Hill (Ass't)	"
" No. 3	"	"	Miss Mabel F. Styres	"
" No. 5	"	"	John Lickers	"
" No. 6	"	"	E. D. Bearfoot	"
" No. 7	"	"	Miss Jess. S. Taggart	"
" No. 9	"	"	" Olive O'Mulvenny	"
" No. 10	"	"	Samuel A. Anderson	"
" No. 11	"	"	Thos. W. Draper	"
" Thomas	"	"	John Miller	"
Skene	Parry Island	Parry Sound	Mrs. A. E. McKelvie	"
South Bay	South Bay	Manitowaning	Miss Zoé St. James	Roman Catholic
Spanish River	Spanish River	Thessalon	Rev. W. E. Phillips	Church of England
St. Clair	Sarnia	Sarnia	Miss A.M. Matthews	Methodist
†Stony Point	Stony Point	"	Mrs. William Cloud	Undenominational
Sucker Creek	Sucker Point	Manitowaning	Miss Ida H. M. Ferguson	Church of England
‡Temogami	On Bear Island	Sturgeon Falls	Miss Clio Bourke	Undenominational
Tyendinaga (Eastern)	Tyendinaga	Tyendinaga	Bert Vanalstine	"
" Western)	"	"	Miss Pearl Joyce	"
" (Central))	"	"	Miss Susan Brant	"
" (Mission)	"	"	Alexander Leween	"
Walpole Island No. 1	Walpole Island	Walpole Island	Miss Grace Aylsworth	Church of England
" No. 2	"	" "	Joseph Sampson	Methodist
West Bay	West Bay	Gore Bay	Miss A. R. Peacock	Roman Catholic
Whitefish Lake	Whitefish Lake	Manitowaning	Miss Minnie Fallu	"
‖Whitefish River	Whitefish River	"	John C. Ross	Church of England
Wikwemikong (Boys)	Wikwemikong (unceded)	"	Rev. Th. Couture, S.J.	Roman Catholic
" (Girls)	" "	"	Miss Eliz. A. Lensch	"
Wikwemikongsing	Wikwemikongsing	"	Miss Rose Fagan	"
Total, Ontario				

* Indian children attend white school. † Reopened August 26, 1907 having been closed since June 30, 1900. ‡ Open during the summer only. ‖ Closed from June 30, 1907.

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

Returns have been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund Paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												Ontario—*Concluded.*
300 00	Vote	12	9	21	14	8	7	2	3	1	....	Sagamook.
375 00	Band	13	10	23	12	11	10	1	1	....	....	Saugeen.
400 00	"	16	15	31	18	14	8	6	....	3	....	Scotch Settlement.
300 00	Vote	9	14	23	13	....	16	5	2	....	....	Serpent River.
125 00	Band	3	9	12	6	2	7	....	2	1	....	*Shannonville.
300 00	Band, $100; Vote, $200	10	7	17	6	5	9	2	1	....	....	Shawanaga.
300 00	Band	10	5	15	8	11	3	1	....	....	....	Sheguiandah.
300 00	"	17	13	30	17	18	7	3	2	....	....	Sheshewaning.
350 00	"	9	5	14	7	4	2	4	3	1	....	Sidney Bay.
		26	16	42	18	13	5	11	12	1	....	Six Nations No. 1.
		48	53	101	44	48	14	6	13	16	4	" No. 2.
		24	35	59	24	25	11	15	5	3	....	" No. 3.
		15	13	28	13	6	5	5	5	7	....	" No. 5.
4,250 00	Band, $3,800; Vote, $450	12	10	22	10	7	4	5	6	....	....	" No. 6.
		35	40	75	27	44	8	9	10	4	....	" No. 7.
		18	20	38	16	14	9	6	6	3	..	" No. 9
		24	21	45	22	13	20	8	3	1	....	" No. 10.
		17	13	30	15	9	7	8	3	3	....	" No. 11.
		27	32	59	28	21	13	8	12	5	...	" Thomas.
300 00	Band, $150; Vote, $150	5	6	11	6	6	2	....	..	3	....	Skene.
300 00	Band, $200; Vote, $100	16	15	31	18	15	7	5	....	4	....	South Bay.
300 00	Vote	5	8	13	6	8	4	....	1	....	....	Spanish River.
300 00	Band	18	17	35	16	23	4	5	3	....	....	St. Clair.
300 00	"	6	4	10	6	10	....	....	....	....	....	†Stony Point.
300 00	Vote	1	5	6	4	....	3	3	....	....	....	Sucker Creek.
150 00	"	15	11	26	14	15	6	3	2	....	....	‡Temogami.
175 00	Band	31	23	54	25	30	16	3	4	1	....	Tyendinaga (Eastern).
250 00	"	22	12	34	15	15	10	5	1	3	....	" (Western).
175 00	"	16	19	35	15	11	7	11	2	4	....	" (Central).
300 00	"	21	15	36	14	25	6	1	4	....	....	" (Mission).
300 00	Band, $200; Vote, $100	18	34	52	22	36	6	7	3	....	....	Whalpole Island No. 1.
300 00	Vote	14	14	28	17	20	3	5	....	....	....	" " No. 2.
300 00	Band	14	18	32	15	19	8	4	1	....	....	West Bay.
300 00	"	7	15	22	6	12	4	6	....	....	....	Whitefish Lake.
300 00	Vote	3	2	5	2	5	....	....	....	....	....	Whitefish River.
300 00	"	21	..	21	8	20	1	....	....	....	....	Wikwemikong (Boys).
300 00	"	....	19	19	7	15	3	....	1	....	....	" (Girls).
300 00	"	14	11	25	13	13	4	3	5	....	....	Wikwemikongsing.
.....	.....	1166	1145	2311	1111	1185	466	338	221	96	5	Total, Ontario.

SCHOOL

STATEMENT of Day Schools in the Dominion (from which Returns

School.	Reserve.	Agency.	Teacher.	Denomination.
QUEBEC.				
Bersimis	Bersimis	Bersimis	Sr. Marie Pauline	Roman Catholic
Caughnawaga (Boys)	Caughnawaga	Caughnawaga	Peter J. DeLisle, Prin	"
			Peter Williams, Asst.	"
" (Girls	"	"	Miss M. E. Howlett, Principal	"
			Miss Teresa McDermott, Assistant	"
" (Bush)	"	"	Mrs. A. Beauvais	"
" (Mission)	"	"	Miss E. M. Young	Methodist
Congo Bridge	Maniwaki	Maniwaki	" R. H. Gilhooly.	Undenominational
Cornwall Island	St. Regis	St. Regis	" K. Roundpoint.	"
*Escoumains	At Escoumains	Bersimis	Joseph L. Otis	Roman Catholic
†Hunters Point	At Hunters Point.	Timiskaming	Miss Lucy I. Street.	"
Lorette	Lorette	Lorette	Sr. St. John of the Cross, Principal	"
			Sister St. Georges, Assistant	"
Maniwaki	Maniwaki	Maniwaki	Miss M. McCaffrey.	"
Maria	Maria	Maria	" Margaret Isaac.	"
Oka (Country)	Oka	Oka	" Cora I. J. Carr.	Methodist
" (Village)	"	"	" L. C. Moore	"
Pointe Bleue	Pointe Bleue	Pointe Bleue	" Berthe Potvin	Roman Catholic
Restigouche	Restigouche	Restigouche	Sr. Mary of the Holy Rosary	"
St. Francis (Prot.)	Pierreville	Pierreville	Rev. Rich. E. Page	Church of England
" (R.C.)	"	"	Sister Woods, Princ.	Roman Catholic.
			Sr. Mary-J., Assist.	Roman Catholic.
			Sr. Dufrost, "	Roman Catholic.
St. Regis	St. Regis	St. Regis	Miss M. V. Nolan	Undenominational
Timiskaming	Timiskaming	Timiskaming	Sister Mary Aimee	Roman Catholic
Total, Quebec				

*Indian children attend white school. Department pays 25 cents per month (per cap.) on average attendance. †Open during summer only.

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

have been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund Paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												Quebec.
300 00	Vote	26	26	52	19	25	12	5	7	3	....	Bersimis.
450 00	"	101	....	101	57	86	9	4	2	....	....	Caughnawaga (Boys).
350 00	"											
350 00	"	....	64	64	31	29	15	5	4	11	....	" (Girls).
300 00	"											
350 00	"	27	16	43	24	21	11	5	6	....	....	" (Bush).
250 00	"	20	31	51	13	47	2	2	....	....	....	" (Mission).
350 00	"	8	25	33	10	7	8	9	2	7	....	Congo Bridge.
350 00	"	24	28	52	19	46	....	2	4	....	....	Cornwall Island.
.....	"	5	8	13	11	1	4	3	3	1	1	Escoumains.
150 00	"	9	11	20	17	6	7	7	....	....	....	Hunter's Point.
150 00	"	21	29	50	34	20	15	15	....	....	....	Lorette.
150 00	"											
300 00	Band	8	22	30	10	10	8	10	2	....	....	Maniwaki.
300 00	Vote	13	12	25	14	12	5	3	3	1	1	Maria.
125 00	"	15	14	29	10	18	4	3	2	2	....	Oka (Country).
125 00	"	12	16	28	13	18	1	2	5	2	....	" (Village).
300 00	"	17	25	42	20	26	9	6	....	1	..	Pointe Bleue.
300 00	"	32	39	71	31	43	11	9	8	..	....	Restigouche.
300 00	"	8	9	17	9	2	2	2	5	3	3	St. Francis (Prot.)
300 00	"											
300 00	"	35	30	65	51	23	11	11	9	11	....	St. Francis (R.C.)
300 00	"											
350 00	"	22	8	30	10	26	4	....	....	....	....	St. Regis.
300 00	"	26	26	52	26	19	20	9	4	....	....	Timiskaming.
.....	.....	429	439	868	429	485	158	112	66	42	5	Total, Quebec.

SCHOOL

STATEMENT of Day Schools in the Dominion (from which Returns

School.	Reserve.	Agency.	Teacher.	Denomination.
NOVA SCOTIA.				
Bear River	Bear River	Digby County	Miss Minnie A. Shea	Roman Catholic
Eskasoni	Eskasoni	Cape Breton "	Daniel J. McDonald	"
*Half-way River	Franklin Manor	Cumberland "	Miss Eva L. Fullerton	"
Indian Cove	Fisher's Grant	Pictou "	" Gertrude McGirr	"
†Middle River	Middle River	Victoria "	Daniel Buckles	"
Millbrook	Millbrook	Colchester "	Miss Jessie Scott	"
New Germany	Lunenburg	Lunenburg "	" Belle B. Hawkesworth	"
Salmon River	Salmon River	Richmond "	Miss Henrietta O'Toole	"
Sydney	Sydney	Cape Breton "	Miss Margaret A. McLellan	"
Whycocomagh	Whycocomagh	Inverness "	Donald J. Gillis	"
Total, Nova Scotia				
NEW BRUNSWICK.				
Burnt Church	Church Point	Northeastern	Miss M. Natalie Babin	Roman Catholic
Big Cove	Big Cove	"	Miss Mary Isaac	"
Eel Ground	Eel Ground	"	" Frances M. Schultz	"
Kingsclear	Kingsclear	Western	Miss Mary C. Monaghan	"
St. Mary's	St. Mary's	"	Miss M. J. Rush	"
Tobique	Tobique	"	" Annetta A. Bradley	"
Total, New Brunswick				
PRINCE EDWARD ISLAND.				
Lennox Island	Lennox Island	P. E. I. Superintendency	William J. Overbeck	Roman Catholic

* Indian children attend white school, Department pays 50 cents per month (per capita) on average attendance. † Closed during the March quarter, 190 .

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

have been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund Paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												Nova Scotia.
300 00	Vote	9	6	15	8	5	2	1	5	1	1	Bear River.
350 00	"	10	8	18	6	7	..	7	3	1	....	Eskasoni.
.....	"	2	3	5	2	4	....	1	....	....	....	Half-way River.
310 00	"	11	7	18	9	7	3	5	....	....	3	Indian Cove.
350 00	"	11	7	18	5	7	4	6	....	1	....	Middle River.
300 00	"	11	9	20	8	3	2	4	6	1	4	Millbrook.
300 00	"	4	6	10	6	4	2	....	....	2	2	New Germany.
300 00	"	12	11	23	7	9	8	4	2	....	.. .	Salmon River.
300 00	"	16	11	27	12	8	5	4	4	4	2	Sydney.
300 00	"	12	8	20	7	9	6	3	1	1	....	Whycocomagh.
.....	...	98	76	174	70	63	32	35	21	11	12	Total, Nova Scotia.
												New Brunswick.
300 00	Vote	11	13	24	12	11	2	9	....	2	....	Burnt Church.
300 00	"	17	27	44	20	19	11	3	4	7	....	Big Cove.
300 00	"	8	3	11	5	9	1	1	....	....	....	Eel Ground.
300 00	"	10	11	21	13	10	5	1	5	....	....	Kingsclear.
300 00	"	13	10	23	17	8	4	3	5	2	1	St. Mary's.
350 00	"	18	18	36	22	16	2	6	7	5	....	Tobique.
.....	.....	77	82	159	89	73	25	23	21	16	1	Total, New Brunswick.
												Prince Edward Island.
300 00	Vote	8	10	18	10	9	3	3	2	1	....	Lennox Island.

STATEMENT of Day Schools in the Dominion (from which Returns have

School.	Reserve.	Agency.	Teacher.	Denomination.
BRITISH COLUMBIA.				
*Andimaul		Babine	Duncan Rankin	Salvation Army.
†Aiyansh	Kitladamicks	Northwest Coast	J. Priestley	Church of England
Alert Bay	Nimkish	Kwawkewlth	Frank S. Ford	" "
Bella Bella	Bella Bella	"	Miss Ethel L. Morris	Methodist
Bella Coola	Bella Coola	Northwest Coast	Miss Eveline Gibson	"
Cape Mudge	Cape Mudge	Kwawkewlth	Rev. J. E. Rendle	"
‡China Hat	China Hat	Northwest Coast	Rev. George Read	"
‡Clayoquot (R.C.)	Opitsat	West Coast	Rev. C. Moser, O.S.B.	Roman Catholic
" (Prot.)	"	" "	Rev. T. G. Barlow	Methodist
‡Gitwingak	Kitwingar	Babine	J. B. Sampare	Church of England
Glen Vowell	Sicedach	"	J. P. Thorkildson	Salvation Army
Gwayasdums	Gwayasdums	Kwawkewlth	Herbert Pearson	Church of England
Hazelton	Gitamaksh	Babine	Rev. Ernest A. Price	" "
Kincolith	Kincolith	Northwest Coast	Miss E. C. Collison	" "
Kitamaat	Kita-Maat	" "	Dr. D. Bower	Meth dist
Kitkahtla	Kitkahtla	" "	Rev. R. W. Gurd	Church of England
Kitsigkla	Kitsegukla	Babine	Miss Hannah Edgar	Methodist
Kishfiax	Kishfiax	"	Miss S. Klippert	"
‡Kisgegas	Kisgegas	"	Joshua J. Harvey	Church of England
Kyaquot	Kyaquot	West Coast	Rev. E. Sobry	Roman Catholic
†Lakalsap	Lakalsap	Northwest Coast	Miss F. A. Copeland	Church of England
Lytton	Lytton	Kamloops-Okanagan	Miss Lilly Blachford	" "
Massett	Massett	Northwest Coast	Rev. W. E. Collison	" "
Meanskinisht	At Meanskinisht	Babine	Miss Flor. B. Kemp	" "
Metlakahtla	Metlakahtla	Northwest Coast	Miss Helena Jackson	" "
Nanaimo	Nanaimo	Cowichan	Rev. W. J. Knott	Methodist
‡Nitanit	Claoose	West Coast	C. A. Dockstader	"
Ohiaht (Dodger's Cove)	No. 8 Haines Island	" "	John T. Ross	Presbyterian
Penticton	At Penticton	Kamloops-Okanagan	J. Barker	Undenominational
Port Essington	Skeena	Northwest Coast	Miss Tranter	Methodist
Port Simpson	At Port Simpson	" "	B. A. Savage	"
Quamichan	Quamichan	Cowichan	Miss C. Ordano	Roman Catholic
Saanich	Saanich	"	William Thompson	" "
Skidegate	Queen Charlotte Island.	Northwest Coast	Miss Ottawa Johnston	Methodist
Somenos	Somenos	Cowichan	Miss M. Lomas	Roman Catholic
Songhees	Songhees	"	Sr. Mary Prudence	" "
Telegraph Creek	Tahltan	Cassiar	Robert H. McInnes	Undenominational
Tsartlip	Tsartlip	Cowichan	Miss Katherine Needham	Roman Catholic
Ucluelet	Itedse	West Coast	Mrs. M. Swartout	Presbyterian
Yuquot	Yuquot	" "	Rev. Alois S. Stern	Roman Catholic
Total, British Columbia				

* New school opened October 1907. No grant by Department.
September quarters, 1907. ‡ Closed during the September quarter, 1907.
received. ‡ Closed during the September and December quarters, 1907.
ment pays $12 per cap. per annum for each Indian child in attendance.

† Closed during the June and
Only one quarterly return
^ White school. The Depart-

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

been received) for the Fiscal Year ended March 31, 1908.

Grand.	From what Fund Paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												British Columbia.
.....	.....	7	11	18	8	13	4	1	....	....	....	*Andimaul .....
300 00	Vote.....	24	16	40	22	36	4	....	....	....	....	†Aiyansh.....
300 00	"	22	10	32	10	11	10	10	....	1	...	Alert Bay. .....
300 00	"	39	33	72	29	6	19	24	17	5	1	Bella Bella..... .....
300 00	"	27	15	42	9	33	9	....	....	....	....	Bella Coola.....
300 00	"	7	10	17	7	13	2	2	....	....	....	Cape Mudge.....
300 00	"	8	5	13	7	5	8	....	....	....	....	‡China Hat.. .....
300 00	"	8	8	16	6	14	2	....	....	....	....	‡Clayoquot (R.C.).....
.....	.....	12	11	23	9	23	....	....	....	....	....	‡ " (Prot.).....
300 00	Vote.....	14	16	30	10	20	8	2	....	....	....	‡Gitwingak.....
300 00	"	13	13	26	16	7	11	6	2	....	....	Glen Vowell.. .....
300 00	"	17	13	30	7	22	6	2	....	....	....	Gwayasdums ....
300 00	"	13	19	32	8	20	7	5	....	....	....	Hazelton.....
300 00	"	25	27	52	29	30	8	6	4	4	....	Kincolith.....
300 00	"	33	19	52	18	36	6	7	3	....	...	Kitamaat.....
300 00	"	14	11	25	16	5	7	9	4	...	....	Kitkahtla.....
300 00	"	4	3	7	4	7	....	....	....	....	....	Kitsegukla.....
300 00	"	26	39	65	22	41	10	9	5	....	....	Kishfiax.... ....
300 00	"	8	12	20	6	16	4	...	....	....	....	Kisgegas.....
300 00	"	5	6	11	5	6	4	1	....	....	....	Kyaquot.....
300 00	"	19	19	38	22	25	11	2	....	....	....	†Lakalsap..... ...
300 00	"	15	14	29	20	29	....	....	....	....	....	Lytton.... .....
300 00	"	17	31	48	19	22	23	3	....	....	....	Massett.....
300 00	"	9	15	24	17	9	9	6	....	....	....	Meanskinisht.....
300 00	"	16	16	32	12	13	8	2	5	4	...	Metlakahtla..... ...
300 00	"	14	12	26	12	19	6	1	....	....	...	Nanaimo.....
300 00	"	10	8	18	6	10	4	4	....	....	....	¶Nitanit.....
300 00	"	13	8	21	15	12	9	....	....	....	....	‖Ohiaht (Dodger's Cove).
12 p.c.	"	3	6	9	5	8	1	....	....	....	...	Penticton ....
300 00	"	15	25	40	13	23	6	8	2	1	....	Port Essington.....
300 00	"	56	41	97	22	38	39	13	7	....	...	Port Simpson.....
300 00	"	13	7	20	10	10	8	2	....	....	....	Quamichan.....
300 00	"	12	6	18	9	13	5	....	....	....	....	Saanich .....
300 00	"	9	13	22	10	19	2	1	....	....	....	Skidegate ....
300 00	"	11	5	16	5	5	8	3	....	....	....	Somenos .....
300 00	"	5	9	14	8	7	1	3	1	2	...	Songhees.....
300 00	"	11	10	21	9	16	5	....	....	....	....	Telegraph Creek.....
300 00	"	9	9	18	8	11	4	1	1	1	....	Tsartlip.....
300 00	"	8	7	15	5	7	2	3	3	....	....	Ucluelet ....
300 00	"	6	4	10	5	4	5	1	....	....	....	Yuquot..... ... .
... .	....	597	562	1159	480	664	285	137	54	18	1	Total, British Columbia

SCHOOL

STATEMENT of Day Schools in the Dominion (from which Returns

School.	Reserve.	Agency.	Teacher.	Denomination.
MANITOBA.				
Berens River	Berens River	Norway House	Miss L. A. Showler.	Methodist
Big Eddy	Pas	Pas	John Whitehead	Church of England
Black River	Black River	Norway House	George Slater	"
Brokenhead	Brokenhead	Clandeboye	Mrs. M. L. Coates	"
Chemawawin	Chemawawin	Pas	Frank Barker	"
*Cross Lake (Prot)	Cross Lake	Norway House	Arthur Santimier	Methodist
Cross Lake (R.C.)	Cross Lake	"	Albert A. Sinclair	Roman Catholic
Cumberland	Cumberland	Pas	Nathan Settee	Church of England
Eagle Lake	Eagle Lake	Savanne	James Fox	"
Ebb and Flow Lake	Ebb & Flow Lake	Manitowapah	Miss Mabel Ramsay.	Roman Catholic
Fairford (Upper)	Fairford	"	Miss Eva Fryer	Church of England
Fairford (Lower)	Fairford	"	William Petty	"
Fisher River	Fisher River	Norway House	Harry Lewis	Methodist
Fort Alexander (Upper)	Fort Alexander	Clandeboye	Geo. C. Smith	Church of England
*Fort Alexander (Lower)	Fort Alexander	"	Miss Nellie Leask	"
Grand Rapids	Grand Rapids	Pas	M. S. Simpson	"
Hollowwater River	Hollowwater River	Norway House	John Sinclair	"
†Islington	Islington	Kenora	C. N. Chapman	"
Jackhead	Jackhead	Norway House	Leonard Hart	"
Jack River	Jack River	"	C. A. Wilkins	"
Lake Manitoba	Lake Manitoba	Matitowapah	L. E. Martel	Roman Catholic
Lake St. Martin	Lake St. Martin	"	Lewis LeClair	Church of England
‡Little Grand Rapids	Little Gd. Rapids	Norway House	Jos. F. Woodsworth	Methodist
Little Saskatchewan	Little Saskatc'wan	Manitowapah	John E. Favell	Church of England
Long Sault	Long Sault	Fort Frances	Miss B. Johnston	"
Moose Lake	Moose Lake	Pas	Elijah Constant	"
Muckles Creek	St. Peters	Clandeboye	Miss C. FitzGerald	"
‖Oak River (Sioux)	Oak River	Birtle	John A. Maggrah	"
Okanase	Okanase	"	Miss M. E. Murray	Presbyterian
Pas	Pas	Pas	R. H. Bagshaw	Church of England
•Peguis	St. Peters	Clandeboye	Miss K. Jonasson	"
Pine Creek	Pine Creek	Manitowapah	Rev. A. Chaumont	Roman Catholic
Poplar River	Poplar River	Norway House	Roy C. Taylor	Methodist
Red Earth	Red Earth	Pas	John G. Kennedy	Church of England
*Roseau Rapids	Roseau Rapids	Portage la Prairie	Miss Rose Godon	Undenominational
Rossville	Norway House	Norway House	Thomas Bolster	Methodist
†Seine River	Seine River	Fort Frances	Peter Spence	Undenominational
Shoal Lake	Pas Mountain	Pas	Walter C. Lundie	Church of England
Shoal River	Shoal River	Manitowapah	Rev. T. H. Dobbs	"
°St. Peters (North)	St. Peters	Clandeboye	Peter Harper	"
St. Peters (South)	St. Peters	"	Miss A. Sutherland	"

*School closed during September quarter 1907. †Only one quarterly return received.
‡Open during the Summer only. ‖School closed December 31, 1907.
•New school, opened March 6, 1908. °School closed during June quarter 1907.

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

have been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												Manitoba.—*Continued.*
300 00	Vote	27	11	38	11	27	8	2	1	....	....	Berens River.
300 00	"	9	14	23	7	16	4	3	....	....	....	Big Eddy.
300 00	"	5	10	15	6	13	2	....	....	....	....	Black River.
300 00	"	13	13	26	13	13	5	4	4	..	....	Brokenhead.
300 00	"	15	11	26	11	18	7	1	....	....	....	Chemawawin.
300 00	"	15	19	34	17	26	5	3	....	....	....	*Cross Lake (Prot.)
300 00	"	13	13	26	9	16	6	4	....	....	....	Cross Lake (R.C.).
300 00	"	11	18	29	9	21	7	1	....	....	....	Cumberland.
300 00	"	6	6	12	4	10	2	....	....	....	....	Eagle Lake.
300 00	"	10	9	19	11	11	4	4	....	....	....	Ebb and Flow Lake.
300 00	"	7	10	17	7	10	5	1	1	....	....	Fairford (Upper).
300 00	"	15	9	24	16	11	6	4	3	....	....	Fairford (Lower).
300 00	"	27	18	45	18	29	11	4	1	....	....	Fisher River.
300 00	"	16	9	25	10	17	5	3	....	....	....	Fort Alexander (Upper).
300 00	"	3	7	10	5	5	4	1	....	....	....	*Fort Alexander (Lower)
300 00	"	11	11	22	9	15	6	1	....	....	....	Grand Rapids.
300 00	"	9	6	15	5	9	3	....	3	....	....	Hollowwater River.
300 00	"	4	3	7	2	4	3	....	....	....	....	†Islington.
300 00	"	10	8	18	7	12	6	....	....	....	....	Jackhead.
300 00	"	16	14	30	13	21	3	6	....	....	....	Jack River.
300 00	"	8	6	14	8	7	4	....	3	....	....	Lake Manitoba.
300 00	"	15	9	24	15	15	5	3	1	....	....	Lake St. Martin.
150 00	"	22	21	43	20	34	9	....	....	....	....	‡Little Grand Rapids.
300 00	"	5	9	14	7	10	2	2	....	....	....	Little Saskatchewan.
300 00	"	8	12	20	9	8	5	7	....	....	....	Long Sault.
300 00	"	8	19	27	15	22	3	2	....	....	....	Moose Lake.
300 00	"	5	7	12	5	4	2	4	1	1	....	Muckles Creek.
300 00	"	4	9	13	4	11	2	....	....	....	....	Oak River (Sioux).
300 00	"	10	7	17	5	13	3	1	....	....	....	Okanase.
300 00	"	20	13	33	7	27	3	3	....	....	....	Pas.
300 00	"	13	3	16	10	10	1	5	....	....	....	¶Peguis.
12 p.c.	"	13	7	20	15	12	4	4	..	....	....	Pine Creek.
300 00	"	10	10	20	8	11	5	4	....	....	....	Poplar River.
300 00	"	12	9	21	11	10	1	5	1	4	....	Red Earth.
300 00	"	6	9	15	9	10	2	2	1	....	....	*Roseau Rapids.
300 00	"	16	10	26	9	18	5	3	....	....	....	Rossville.
300 00	"	5	5	10	6	2	5	3	....	....	....	†Seine River.
300 00	"	10	5	15	11	7	3	3	2	....	....	Shoal Lake.
300 00	"	14	16	30	23	22	2	3	3	....	....	Shoal River.
300 00	"	11	11	22	10	16	4	...	1	1	....	°St. Peters (North).
300 00	"	14	15	29	9	14	7	4	4	....	....	St. Peters (South).

STATEMENT of Day Schools in the Dominion (from which

School.	Reserve.	Agency.	Teacher.	Denomination.
MANITOBA—*Concluded.*				
St. Peter's (East)	St. Peter's	Clandeboye	Miss Hazel Overton	Church of England
" (R.C.)	"	"	" Mary FitzGerald	Roman Catholic
Swan Lake	Swan Lake	Portage la Prairie	" Marjorie McIlwaine	Presbyterian
Waterhen River	Waterhen River	Manitowapah	" Honora Adam	Roman Catholic
Total, Manitoba				
SASKATCHEWAN.				
Ahtahkakoop's	Ahtahkakoop's	Carlton	Louis Ahenakew	Church of England
Big River	Kenemotayoo's	"	George Crane	" "
Day Star's	Day Star's	Touchwood Hills	Miss Soph. E. Smythe	" "
Fishing Lake	Fishing Lake	" "	Wilfrid Sandilands	" "
Fort à la Corne (South)	James Smith's	Duck Lake	Mrs. Ada A. Godfrey	Undenominational
James Smith's	" "	" "	Melville Leffler	Church of England
John Smith's	John Smith's	" "	Robert Bear	" "
*Keys	Keys	Pelly	Rev. Owen Owens	" "
Little Pines	Little Pines	Battleford	C. T. Desmarais	" "
Meadow Lake	Meadow Lake	"	Pierre C. Morin	Roman Catholic
Mistawasis	Mistawasis	Carlton	C. W. Bryden	Presbyterian
Montreal Lake	Montreal Lake	"	Jno. R. Settee	Church of England
Poundmaker's	Poundmaker's	Battleford	Miss Agnes Calvert	Roman Catholic
Red Pheasant	Red Pheasant	"	Mrs. R. Jefferson	Church of England
Sioux Mission	Wahspaton	Carlton	Jonathan Beverley	Presbyterian
Stony (Eagle Hills)	Stony	Battleford	James Isbester	Church of England
Sturgeon Lake	William Twatt's	Carlton	Robert Bear	" "
Thunderchild's (C.E.)	Thunderchild's	Battleford	Miss E. M. Cave	" "
White Bear	White Bear	Moose Mountain	" E. May Armstrong	Presbyterian
Total, Saskatchewan				
ALBERTA.				
Goodfish Lake	Pakan	Saddle Lake	Miss Jean Batty	Methodist
†Louis Bull's	Louis Bull's	Hobbema	Mrs. A. A. Goodhand	"
‡Saddle Lake	Saddle Lake	Saddle Lake	Mrs. J. A. Seller	"
†Samson's	Samson's	Hobbema	Miss Sue Klippert	"
St. Anthony's	Lesser Slave Lake, Peace River Dist.	Treaty No. 8	Rev. C. Falher, O.M.I	Roman Catholic
†Upper Peace River (Christ Church Mission)	At Shaftsbury, Upper Peace River District	" "	Miss Lilian Millen	Church of England
Whitefish Lake	James Seenum's	Saddle Lake	" Inez W. Batty	Methodist
Whitefish Lake (St. Andrew's Mission)	Lesser Slave Lake District	Treaty No. 8	" C. D. White	Church of England
Total, Alberta				

* Closed July 29, 1907, on account of poor attendance.
† Only one quarterly return received.
‡ Closed during the June quarter, 1907.

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

Returns have been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund Paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												Manitoba—*Concluded.*
300 00	Vote	22	19	41	12	15	14	12	....	....	....	St. Peter's (East).
300 00	"	15	11	26	12	14	2	8	1	1	..	" (R.C.).
300 00	"	8	4	12	6	11	1	....	....	....	....	Swan Lake.
300 00	"	4	7	11	6	6	5	....	....	....	....	Waterhen River.
.....		520	472	992	442	633	201	120	31	7	....	Total, Manitoba.
												Saskatchewan.
300 00	Vote	10	4	14	8	9	....	4	1	....	...	Ahtahkakoop's.
300 00	"	13	7	20	7	17	3	....	....	....	....	Big River.
300 00	"	7	8	15	11	5	3	3	4	...	....	Day Star's.
300 00	"	2	8	10	5	3	7	....	....	....	....	Fishing Lake.
300 00	"	9	7	16	6	9	7	....	...	....	....	Fort à la Corne (South).
300 00	"	15	15	30	16	21	9	....	...	...	....	James Smith's.
300 00	"	9	11	20	9	11	7	2	....	....	....	John Smith's.
300 00	"	5	11	16	7	12	1	3	....	....	....	*Keys.
300 00	"	9	7	16	7	11	3	2	....	....	....	Little Pines.
300 00	"	9	7	16	4	16	....	....	....	....	....	Meadow Lake.
300 00	"	8	8	16	7	7	4	4	...	1	....	Mistawasis.
300 00	"	24	26	50	19	35	9	4	2	..	....	Montreal Lake.
300 00	"	10	4	14	3	12	1	1	....	....	...	Poundmaker's.
300 00	"	10	3	13	4	12	1	....	....	....	....	Red Pheasant.
300 00	"	4	5	9	5	4	4	1	...	....	....	Sioux Mission.
300 00	"	4	2	6	3	6	...	....	....	....	....	Stony (Eagle Hills).
300 00	"	9	4	13	6	8	4	1	....	....	....	Sturgeon Lake.
300 00	"	7	2	9	5	6	3	....	....	....	....	Thunderchild's (C.E.)
300 00	"	3	10	13	7	5	2	2	4	..	....	White Bear.
.....		167	149	316	139	209	68	27	11	1	..	Total, Saskatchewan.
												Alberta.
300 00	Vote	11	5	16	8	8	1	4	3	..	...	Goodfish Lake.
300 00	"	8	6	14	5	14	..	....	....	....	....	†Louis Bull's.
300 00	"	6	5	11	6	8	2	1	....	....	....	‡Saddle Lake.
300 00	"	10	14	24	2	19	5	....	....	....	....	†Samson's.
300 00	"	13	11	24	24	24	....	....	....	....	....	St. Anthonys.
300 00	"	10	5	15	11	8	2	2	....	2	1	†Upper Peace River (Christ Church Mission).
300 00	"	12	9	21	10	15	6	....	....	....	....	Whitefish Lake,
300 00	"	16	12	28	16	20	3	3	2	....	...	Whitefish Lake (St. Andrew's Mission).
.....	.....	86	67	153	82	116	19	10	5	2	1	Total, Alberta.

SCHOOL

STATEMENT of Day Schools in the Dominion (from which Returns have

School.	District.	Teacher.	Denomination.
OUTSIDE TREATY LIMITS.			
*Carcross	Yukon District	Miss F. Hutchison	Church of England
Fort George	Fort George, James Bay, Moosonee Diocese	W. G. Walton	" "
*Moosehide	Yukon District	Rev. Benj. Totly	" "
Nelson House	At Nelson House, Keewatin District	W. W. Shoup	Methodist
Split Lake	At Split Lake, Keewatin District	Charles G. Fox	Church of England
St. Matthew's Mission	At Fort McPherson, near mouth of Peel River, McKenzie River District	Rev. F. Hamilton	" "
York Factory	At York Factory, Hudson Bay, Keewatin District	Rev. R. Faries	" "
Total, Outside Treaty.			

* The government paid $3,279.85 to provide for education in the Yukon for the fiscal year 1907-08.

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund Paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
$ cts.												Outside Treaty Limits.
.....	....	9	8	17	16	7	7	2	1	....	....	*Carcross.
200 00	Vote...	56	53	109	61	109	....	....	....	...	...	Fort George.
.....	....	11	12	23	7	15	7	1	....	....	....	*Moosehide.
200 00	Vote.....	9	9	18	6	11	5	1	1	....	....	Nelson House.
200 00	"	18	8	26	14	19	7	....	....	....	...	Split Lake.
200 00	"	12	9	21	9	21	....	...	....	....	....	St. Matthews Mission.
200 00	"	9	4	13	10	4	7	2	...	....	....	York Factory.
.....	... .	124	103	227	123	186	33	6	2	....	....	Total, Outside Treaty.

SCHOOL

STATEMENT of Boarding Schools in the Dominion (from which

School.	Situation.	Principal.	Denomination.
ONTARIO.			
Albany Mission	At Fort Albany, James Bay, Treaty No. 9	Rev. F. X. Fafard, O.M.I.	Roman Catholic
Chapleau	At Chapleau, Ont	Rev. Ernest O. Duke	Church of England
Fort William Orphanage	At Fort William, Ont	Sister M. F. Clare	Roman Catholic
Moose Fort	At Moose Fort, James Bay, Treaty No. 9	Rev. A. McClain Banting	Church of England
Total, Ontario			
BRITISH COLUMBIA.			
Ahousaht	At Ahousaht, West Coast Vancouver Island, West Coast agency	Rev. J. L. Millar, B.A.	Presbyterian
Alberni	Near Alberni, adjoining Shesaht reserve, West Coast agency	James R. Motion	"
Port Simpson Boys' Home	At Port Simpson, Northwest Coast agency	Chas. H. Johnston	Methodist
Port Simpson Girls' Home	At Port Simpson, Northwest Coast agency	Miss Hannah M. Paul	"
Sechelt	On Sechelt reserve, Fraser River agency	Sister Theresine	Roman Catholic
Squamish	North side of Burrard inlet, opposite city of Vancouver, Fraser River agency	Sister Mary Amy	" "
St. Mary's	At St. Mary's Mission on the Fraser river	Rev. J. P. O'Neill, O.M.I.	" "
Yale (All Hallows)	At Yale on the Fraser river.	Constance, Sister Superior	Church of England
Total, British Columbia			
MANITOBA.			
Birtle	At Birtle, Man., Birtle agency	W. W. McLaren	Presbyterian
Cecilia Jeffrey	East of Shoal Lake reserve No. 40, Kenora agency	Rev. F. T. Dodds	"
Fort Alexander	Fort Alexander reserve, Clandeboye agency	Rev. Ph. Vales, O. M.I.	Roman Catholic
Fort Frances	On Agency reserve, Fort Frances agency	Rev. H. M. Brassard, O.M.I.	" "
Kenora	Near Kenora, Ont, Kenora agency.	Rev. P. Bousquet, O. M.I.	" "
Norway House	At Rossville village, on Norway House reserve	Rev. J. A. Lousley	Methodist
Pine Creek	West side Lake Winnipegosis, adjoining Pine Creek reserve, Manitowapah agency	Rev. A. Chaumont	Roman Catholic
Portage la Prairie	¼ mile east of Portage la Prairie, Man	W. A. Hendry	Presbyterian
Sandy Bay	On Sandy Bay reserve, Manitowapah agency	Rev. G. Leonard	Roman Catholic
Total, Manitoba			

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

Returns have been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what Fund paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
												Ontario.
25 pupils, $60 p. cap.	Vote..	14	20	34	34	22	4	5	3	....	....	Albany Mission.
40 " $60 " .	" .	13	19	32	20	27	5	....	....	....	....	Chapleau.
25 " $60 " .	" .	6	22	28	25	9	....	11	3	5	....	Fort William Orphanage.
25 " $72 " .	" .	18	23	41	29	18	10	8	4	1	....	Moose Fort.
....	.....	51	84	135	108	76	19	24	10	6	...	Total, Ontario.
												British Columbia.
25 pupils, $60 p. cap.	Vote..	24	19	43	40	6	8	4	14	11	....	Ahousaht.
50 " $60 " .	" .	20	29	49	42	12	10	7	11	9	...	Alberni.
20 " $60 " .	" .	24	....	24	18	8	3	4	7	2	....	Port Simpson Boys' Home.
35 " $60 " .	" .	...	45	45	42	7	15	11	8	3	1	Port Simpson Girls' Home.
50 " $60 " .	" .	20	25	45	44	14	9	12	10	....	....	Sechelt.
50 " $60 " .	" .	21	29	50	50	13	11	10	10	2	4	Squamish.
60 " $60 " .	" .	34	45	79	79	7	14	28	17	13	....	St. Mary's.
35 " $60 " .	" .	....	31	31	21	2	5	9	4	3	8	Yale (All Hallows).
..... .	....	143	223	366	336	69	75	85	81	43	13	Total, British Columbia.
												Manitoba.
50 pupils, $72 p. cap.	Vote..	22	29	51	42	12	10	11	9	9	...	Birtle.
30 " $72 " .	" .	23	14	37	26	25	6	5	1	....	.	Cecilia Jeffrey.
60 " $72 " .	" .	29	32	61	60	17	10	7	11	16	....	Fort Alexander.
40 " $72 " .	" .	21	28	49	47	19	20	9	1	....	....	Fort Frances.
40 " $72 " .	" .	18	29	47	42	12	9	13	10	3	..	Kenora.
50 " $72 " .	" .	29	29	58	44	10	12	16	15	5	....	Norway House.
65 " $72 " .	" .	23	42	65	65	22	5	17	10	9	2	Pine Creek.
25 " $72 "	" .	9	17	26	26	10	5	3	5	2	1	Portage la Prairie.
42 " $72 " .	" .	22	22	44	40	23	10	8	2	1	....	Sandy Bay.
.. ..	....	196	242	438	392	150	87	89	64	45	3	Total, Manitoba.

STATEMENT of Boarding Schools in the Dominion (from which

School.	Situation.	Principal.	Denomination.
SASKATCHEWAN.			
Cowesses	On Cowessess reserve, Crooked Lakes agency	Rev. S. Perrault, O.M.I.	Roman Catholic...
Crowstand	On Côté's reserve, Pelly agency	Rev. W. McWhinney	Presbyterian.
Duck Lake	3 miles from Duck Lake reserve, Duck Lake agency	Rev. O. Charlebois, O.M.I.	Roman Catholic...
Emmanuel College	2 miles west of Prince Albert, Sask.	Rev. James Taylor	Church of England
File Hills	Adjoining File Hills reserve, Touchwood Hills agency	Miss Kate Gillespie	Presbyterian.
Gordon's	On Geo. Gordon's reserve, Touchwood Hills agency	M. Williams	Church of England
Keeseekouse	Adjoining Keeseekouse reserve, Pelly agency	Rev. J. DeCorby, O.M.I.	Roman Catholic...
*Lac la Plonge	At Lac la Plonge, Carlton agency	Rev. François Ancel, O.M.I.	" "
Lac la Ronge	At Lac la Ronge, Carlton agency	Rev. James Brown	Church of England
Muscowequan's	Adjoining Muscowequan's reserve, Touchwood Hills agency	Rev. E. Planet, O.M.I.	Roman Catholic...
Onion Lake (R.C.)	On Seekaskootch reserve, Onion Lake agency	Rev. E. J. Cunningham	" "
" " (C.E.)	On Makaoo's reserve, Onion Lake agency	Rev. J. R. Matheson	Church of England
Round Lake	On north side Round Lake, Crooked Lakes agency	Rev. H. McKay	Presbyterian.
Thunderchild's	Adjoining Thunderchild's reserve, Battleford agency	Rev. H. Delmas, O.M.I.	Roman Catholic...
Total, Saskatchewan			
ALBERTA.			
Blood (C.E.)	Off Blood reserve, opposite Blood agency head quarters	Rev. G. E. Gale	Church of England
" (R.C.)	On Blood reserve, Blood agency	Rev. J. M. Salaun	Roman Catholic...
Blue Quills	On Blue Quill's reserve, Saddle Lake agency	Rev. Léon Balter	" "
Crowfoot	At South Camp, Blackfoot reserve, Blackfoot agency	Rev. J. L. LeVern, O.M.I.	" "
Ermineskin's	On Ermineskin's reserve, Hobbema agency	Rev. P. Moulin, O.M.I.	" "
Fort Chipewyan (Holy Angels)	At Fort Chipewyan, Treaty No 8.	Sr. M. McDougall	" "
Lesser Slave Lake (C.E.)	On northwest side of Lesser Slave Lake, Treaty No. 8.	Rev. Wm. H. Trickett	Church of England
" " " (R.C.)	On northeastern side of Lesser Slave Lake, Treaty No. 8.	Rev. C. Falher, O.M.I.	Roman Catholic...
McDougall Orphanage	In Morleyville settlement, Stony agency	C. B. Oakley	Methodist.
Old Sun's	At North Camp, Blackfoot reserve, Blackfoot agency	Rev. H. W. Gibbon-Stocken	Church of England

* Formerly the Ile à la Crosse boarding school.

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

Returns have been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what fund paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
												Saskatchewan.
45 pupils, $72 p. cap..	Vote..	25	23	48	45	18	7	10	13	...	....	Cowessess.
50 " $72 " ..	" .	27	25	52	47	20	6	17	6	3	....	Crowstand.
100 " $100 " ..	" .	59	47	106	101	39	7	26	26	8	....	Duck Lake.
{20 boys; $100 " 32 (boys and girls) $72 p. cap.}	" .	31	35	66	51	35	7	16	3	5	....	Emmanuel College.
25 pupils, $72 p. cap..	" .	13	10	23	19	10	5	2	3	3	....	File Hills.
40 " $72 " ..	" .	16	17	33	28	18	6	3	6	....	....	Gordon's.
25 " $72 " ..	" .	11	19	30	26	11	3	10	6	....	....	Keeseekouse.
20 " $72 " ..	" .	5	19	24	22	14	4	6	....	....	...	*Lac la Plonge.
50 " $72 " ..	" .	17	26	43	31	34	9	....	....	....	....	Lac la Ronge.
40 " $72 " ..	" .	13	23	36	31	13	6	7	5	5	..	Muscowequan's.
50 " $72 " ..	" .	18	32	50	42	29	3	8	4	6	....	Onion Lake (R.C.)
20 " $72 " ..	" .	13	6	19	15	9	1	2	4	3	....	" " (C.E.)
40 " $72 " ..	" .	22	17	39	33	12	9	9	5	2	2	Round Lake.
20 " $72 " ..	" .	11	9	20	20	5	5	3	1	4	2	Thunderchild's.
....	.....	281	308	589	511	267	78	119	82	39	4	Total, Saskatchewan.
												Alberta.
50 pupils, $72 p. cap..	Vote..	20	21	41	39	13	8	11	....	....	9	Blood (C.E.)
40 " $72 " ..	" .	22	27	49	42	13	14	18	4	....	....	" (R.C.)
45 " $72 " ..	" .	26	21	47	39	16	8	9	6	4	4	Blue Quills.
30 " $72 " ..	" .	23	13	36	34	14	2	11	7	2	....	Crowfoot.
50 $ $72 " ..	" .	22	30	52	50	8	6	15	....	20	3	Ermineskin's.
40 " $72 " ..	" .	15	18	33	28	13	10	10	....	...	....	Fort Chipewyan (Holy Angels).
15 " $72 " ..	" .	10	16	26	15	8	6	3	2	7	....	Lesser Slave Lake (C.E.). ..
40 " $72 " ..	" .	20	23	43	41	30	10	3	....	....	....	Lesser Slave Lake (R.C.)...
45 " $72 " ..	" .	20	20	40	29	22	6	9	3	...	....	McDougall Orphanage. ....
50 " $72 " ..	" .	16	17	33	31	10	6	11	6	....	...	Old Sun's.

STATEMENT of Boarding Schools in the Dominion (from which Returns have

School	Situation.	Principal.	Denomination.
ALBERTA—*Concluded.*			
Peigan (C.E.)	On Peigan Reserve, Peigan agency	Rev. W. R. Haynes.	Church of England
" (R.C.)	" " "	Rev. L. Doucet, O.M.I	Roman Catholic...
Sarcee	On Sarcee reserve, Sarcee agency	Percy Stocken	Church of England
*Smoky River (St. Augustine)	Near Peace River Crossing, at mouth of Smoky River, Treaty No. 8	Rev. Sister Mathias.	Roman Catholic ..
St. Albert	At St. Albert Settlement, Edmonton agency	Rev Sister M. A. Carroll	" " ..
Sturgeon Lake	At Sturgeon Lake, Treaty No. 8.	Rev. J. Calais, O.M.I.	" " ..
Vermilion, (St. Henri)	At Vermilion, Treaty No. 8	Rev. C. Joussard. O.M.I	" " ..
Wabiskaw Lake (C.E)	At St. John's Mission, Wabiskaw Lake, Treaty No 8	Miss Esther A. Gardiner	Church of England
" (R.C.)	At St. Martins Mission, Wabiskaw, Lake, Treaty No. 8	Rev. Sr. Mary Flore	Roman Catholic...
Total, Alberta			
NORTHWEST TERRITORIES.			
Fort Resolution	At Fort Resolution, Great Slave Lake, Treaty No. 8	Rev. Sr. McQuillan..	Roman Catholic...
Hay River (St. Peter's Mission)	At Hay River, Great Slave Lake, Treaty No. 8	Miss Elizabeth M. Wilgress	Church of England
Providence Mission (Sacred Heart	At Fort Providence, McKenzie River district.	Rev. Sr. St Elzear...	Roman Catholic ..
Total, N. W. T.			

* School to be closed ; grant transferred to Sturgeon Lake boarding school from Oct. 1, 1907.

SESSIONAL PAPER No. 27

STATEMENT—*Continued.*

been received) for the Fiscal Year ended March 31, 1908.

Grant.	From what fund paid.	Number on Roll.			Average Attendance.	Standard.						School.
		Boys.	Girls.	Total.		I	II	III	IV	V	VI	
												Alberta—*Concluded.*
30 pupils, $72 p. cap..	Vote..	15	9	24	23	12	8	3	1	....	...	Peigan (C.E.)
30 " $72 " ..	" ..	18	12	30	30	15	9	5	1	....	...	" (R.C.)
20 " $72 " ..	" ..	5	7	12	11	6	...	2	2	2	....	Sarcee.
....	.....	2	....	2	2	1	1	....	....	....	...	*Smoky River(St. Augustine)
80 " $72 " ..	" ..	38	34	69	66	30	24	8	6	1	....	St. Albert.
15 " $72 " ..	" ..	8	7	15	15	15	...	....	....	...	....	Sturgeon Lake.
15 " $72 " ..	" ..	10	7	17	9	16	1	....	....	....	....	Vermilion (St. Henri).
15 " $72 " ..	" ..	6	8	14	8	4	5	2	2	1	....	Wabiskaw Lake (C.E.)
25 " $72 " ..	" ..	9	18	27	27	10	11	6	...	....	....	" (R.C.)
....		305	305	610	539	256	135	126	40	37	16	Total, Alberta.
												Northwest Territories.
25 pupils, $72 p. cap..	Vote..	10	11	21	17	5	13	3	...	....	....	Fort Resolution.
20 " $72 " ..	" ..	14	17	31	30	17	6	5	1	2	....	Hay Riv.(St. Peter's Mission)
40 " $72 " ..	" ..	18	32	50	45	26	12	9	3	....	....	Providence Mission (Sacred Heart).
... .	...	42	60	102	92	48	31	17	4	2	....	Total N.W.T.

SCHOOL

STATEMENT of Industrial Schools in the

School.	Situation.	Principal.	Denomination	Grant.
ONTARIO.				
Mohawk Institute	At Brantford	Rev. R. Ashton	Undenominational	100 pupils, $60 per cap
Mount Elgin Institute	At Muncey	Rev. T. T. George.	Methodist	100 " $60 "
Shingwauk Home	At Sault Ste. Marie	Geo. Ley King	Church of England	100 " $60 "
Wikwemikong (Boys).	At Wikwemikong	Rv. T. Couture, S.J.	Roman Catholic	134 " $60 "
" (Girls).	"	"	"	
Total, Ontario				
BRITISH COLUMBIA.				
Alert Bay	At Alert Bay, Kwawkewlth agency	A. W. Corker	Church of England	35 pupils, $130 per cap
Clayoquot	On Clayoquot sound, west coast Vancouver Island, West Coast agency	Rev. P. Maurus.	Roman Catholic	50 " $130 "
Coqualeetza Home	At Chilliwack, Fraser River agency	Rev. R. H. Cairns.	Methodist	80 " $130 "
Kamloops	At Kamloops	Rev. A. M. Carion	Roman Catholic	50 " $130 "
Kootenay	At St. Eugene, Kootenay agency	Rev. J. Wagner, O.M.I.	"	50 " $130 "
Kuper Island	On Kuper Island, Cowichan agency	Rev. D. Claessen.	"	50 " $130 "
Lytton	2½ miles from Lytton, Kamloops-Okanagan agency	Rev. Geo. Ditcham	Church of England	40 " $130 "
*Metlakahtla	At Metlakahtla, West Coast agency	Rev. Jno. R. Scott	"	30 boys, $140 " 30 girls, $100 "
Williams Lake	At Williams Lake	Rev. H. Boening.	Roman Catholic	50 pupils, $130 "
Total, B. Columbia.				
MANITOBA.				
Brandon	At Brandon	Rev. T. Ferrier	Methodist	115 pupils, $120 p. cap
†Elkhorn	At Elkhorn	A. E. Wilson.	Undenominational	
Total, Manitoba				
SASKATCHEWAN.				
Battleford	At Battleford	Rev. E. Matheson.	Church of England	100 pupils, $145 p. cap
Qu'Appelle	At Lebret	Rev. J. Hugonard.	Roman Catholic	225 " $120 "
Regina	At Regina	R. B. Heron	Presbyterian	100 " $145 "
Total, Sask.				
ALBERTA.				
†Calgary	At Calgary	Rev. G. H. Hogbin	Undenominational	
Red Deer	At Red Deer	Rev. Art. Barner	Methodist	80 pupils, $130 p. cap
St. Joseph's	At Davisburg	Rev. J. Riou, O.M.I	Roman Catholic	100 " $130 "
Total, Alberta				

* This school closed March 31, 1908. † All expenses paid by the government.

NOTE.—All boys at industrial schools are taught farming, and all

SESSIONAL PAPER No. 27

STATEMENT—*Concluded.*

Dominion for the Fiscal Year ended March 31, 1908.

From what fund Paid.	Number on Roll.			Average Attendance.	Standard.						Industries Taught.								School.
	Boys.	Girls.	Total.		I	II	III	IV	V	VI	Carpenter.	Shoemaker.	Tailor.	Blacksmith.	Baker.	Harnessmaker	Printer.	Painter.	Tinsmith.	
																				Ontario.
Vote	49	67	116	105	5	13	22	32	14	30										Mohawk Institute.
"	54	55	109	98	26	19	16	36	8	4										Mount Elgin Institute.
"	42	28	70	60	17	12	27	5	6	3	3									Shingwauk Home.
"	78		78	77	7	8	46	12	5		5	2								Wikwemikong (Boys).
"		73	73	61	9	19	20	13	12											" (Girls).
	223	223	446	401	64	71	131	98	45	37	8	2								Total, Ontario.
																				British Columbia.
Vote	27		27	26	2	6	6	10	3		18									Alert Bay.
"	30	32	62	56	1	12	9	19	8	13	7	5						6		Clayoquot.
"	59	37	96	85	31	20	14	14	11	6	5				1					Coqualeetza Home.
"	25	37	62	57	15	11	7	14	5	10	13	5								Kamloops.
"	29	23	52	50	10	7	19	9	6	1										Kootenay.
"	46	33	79	71	21	14	11	12	10	11	7	6			8			3		Kuper Island.
"	35		35	30	6			12	17		7			4						Lytton.
"	28	20	48	20	4	7	19	4	6	8	11	1						9		Metlakahtla.
"	23	27	50	50		9	17	9	9	6	4									Williams Lake.
	302	209	511	445	90	86	102	103	75	55	72	17		4	9			18		Total, B. Columbia.
																				Manitoba.
Vote	55	49	104	92	28	34	17	14	8	3	8									Brandon.
	54	43	97	77	22	9	18	28	14	6	9	1		2		1			1	Elkhorn.
	109	92	201	169	50	43	35	42	22	9	17	1		2		1			1	Total, Manitoba.
																				Saskatchewan.
Vote	35	32	67	63	18	4	24	11	8	2	6									Battleford.
"	110	131	241	234	62	92	44	34	7	2	9			4						Qu'Appelle.
"	40	28	68	58	21	9	18	9	8	3	7						2			Regina.
	185	191	376	355	101	105	86	54	23	7	22			4			2			Total, Saskatchewan.
																				Alberta.
	16		16	13	2	5	9				2									Calgary.
Vote	45	25	70	50	19	13	19	12	6	1	2									Red Deer.
"	50	21	71	65	8	14	23	8	11	7	3									St. Joseph's.
	111	46	157	128	29	32	51	20	17	8	5									Total, Alberta.

girls, sewing, knitting and general household duties.

SUMMARY OF

Province.	Class of School.			Total Number of Schools.	Denomination.						Number on Roll.			Average Attendance.
	Day	Boarding	Industrial		Undenominational	Roman Catholic	Church of England	Methodist	Presbyterian	Salvation Army	Boys	Girls	Total	
Ontario	80	4	5	89	39	28	13	9	....	....	1,440	1,452	2,892	1,620
Quebec	20	....	....	20	3	13	1	3	....	....	429	439	868	429
Nova Scotia	10	...	...	10	....	10	....	....	..	...	98	76	174	70
New Brunswick	6	....	....	6	...	6	....	....	..	....	77	82	159	89
Prince Edward Island	1	..	...	1	....	1	....	....	....	...	8	10	18	10
British Columbia	40	8	9	57	2	16	17	16	4	2	1,042	994	2,036	1,261
Manitoba	45	9	2	56	3	11	29	8	5	....	825	806	1,631	1,003
Saskatchewan	19	14	3	36	1	10	18	....	7	...	633	648	1,281	1,005
Alberta	8	19	3	30	1	14	8	7	....	....	502	418	920	749
Northwest Territories	..	3	....	3	...	2	1	....	....	...	42	60	102	92
Outside Treaty Limits	7	...	...	7	..	....	6	1	....	....	124	103	227	123
Total	236	57	22	315	49	111	93	44	16	2	5,220	5,088	10,308	6,451

NOTE.—All boys at industrial schools are taught farming, and all girls sewing, knitting and general

DEPARTMENT OF INDIAN AFFAIRS,
OTTAWA, March 31, 1908.

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SCHOOL STATEMENT.

Percentage of Attendance.	Standard.						Industries taught.								Total.	Province.
	I	II	III	IV	V	VI	Carpenter	Shoemaker	Tailor	Blacksmith	Baker	Harnessmaker	Printer	Painter	Tinsmith		
56·02	1,325	556	493	329	147	42	8	2	..	..	..	..	..	..	..	10	Ontario.
49·42	485	158	112	66	42	5	....	..	..	..	..	..	..	..	..	....	Quebec.
40·23	63	32	35	21	11	12	....	..	..	..	..	..	..	..	..	....	Nova Scotia.
55·97	73	25	23	21	16	1	...	..	..	..	..	..	..	..	..	.....	New Brunswick.
55·55	9	3	3	2	1	....	....	..	..	..	..	..	..	..	..	.....	Prince Edward Island.
61·94	823	446	324	238	136	69	72	17	..	4	9	..	..	18	..	120	British Columbia.
61·49	833	331	244	137	74	12	17	1	..	2	..	1	..	..	1	22	Manitoba.
78·45	577	251	232	147	63	11	22	..	..	4	..	..	2	..	..	28	Saskatchewan.
81·41	401	186	187	65	56	25	5	..	..	..	..	..	..	..	..	5	Alberta.
90·19	48	31	17	4	2	...	....	..	..	..	..	..	..	..	..	....	Northwest Territories.
54·18	186	33	6	2	...	....	....	..	..	..	..	..	..	..	..	.....	Outside Treaty Limits.
62·58	4,823	2,052	1,676	1,032	548	177	124	20	..	10	9	1	2	18	1	185	Total.

household duties.

INDIAN LAND STATEMENT.

SHOWING the number of acres of Indian Lands sold during the year ended March 31, 1908, the total amount of purchase money realized, and the approximate quantity of land remaining unsold at that date.

ONTARIO.

Town or Township.	County or District.	Number of acres of land sold.	Amount of Sale.	Approximate Quantity remaining unsold.	Remarks.
		Acres.	$ cts.	Acres.	
Albemarle	Bruce	199·00	49 75	217·00	Some of these lands were resumed by the department, the conditions of sale not having been complied with, so that in certain cases there appears to have been more land remaining unsold at the close of the past fiscal year than remained unsold according to the previous year's report.
Eastnor	"	2,460·00	587 65	80·00	
Lindsay	"	409·00	183 75	2,666·00	
St. Edmund	"			3,806·00	
Bury (T. plot)	"			88·58	
Hardwicke "	"			1,111·00	
Oliphant "	"			40·09	
Southampton "	"			21·75	
Wiarton "	"			12·22	
Islands off the West Coast					
Saugeen Peninsula	Bruce			262·97	
Keppel	Grey	76·00	50 00	54·60	
White Cloud Island	"			7·00	
Thessalon	Algoma	227·50	233 07	948·76	
" (T. plot)	"	8·14	332 25	28·76	
Aweres	"	727·00	363 50	3,968·10	
Archibald	"			3,264·00	
Dennis	"	80·50	40 25	364·50	
Herrick	"			80·00	
Havilland	"			641·50	
Kars	"	811·50	974 50	7,367·50	
Apaquosh (T. plot)	"			311·58	
Laird	"			3,839·43	
Macdonald	"	159·00	79 50	1,105·85	
Meredith	"			3,883·45	
Duncan	"	593·00	519 45	10,107·00	
Kehoe	"			14,120·50	
Thompson	"	163·88	155 69	125·51	
Cobden	"			186·08	
Pennefather	"			1,681·00	
Ley	"	263·00	1,052 00	1,001·00	
Fisher (T. plot)	"	130·20	520 80	365·80	
Mississaga	"	6·42	9 63		
Tilley	"			281·00	
Tupper	"			3,193·50	
Fenwick	"	391·00	196 00	5,737·75	
Vankoughnet	"			5,686·50	
Billings	Manitoulin	444·00	88 80	3,111·00	
Bidwell	"			1,289·25	
Howland	"	7·75	10 00	3,217·25	
Sheguiandah	"	561·50	102 20	2,938·50	
" (T. plot)	"			312·07	
Assiginack	"	1,076·00	215 20	100·00	
Campbell	"	396·00	79 20	672·00	
Manitowaning (T. Plot)	"	6·05	321 00	14·34	
Carnarvon	"	100·00	25 00	7,840·00	
Tehkummah	"			4,470·40	
Sandfield	"	575·00	121 00	3,987·00	
Shaftesbury (T. plot)	"	·50	25 00	350·28	
Tolsmaville (T. plot)	"	2·00	4 50	1,003·17	
Allan	"	3,006.00	622 70	1,626·00	
Burpee	"	3,187·00	631 40	4,667·00	

SESSIONAL PAPER No. 27

INDIAN LAND STATEMENT showing the number of acres sold, &c., during the Year ended March 31, 1908—*Continued.*

ONTARIO—*Continued.*

Town or Township.	County or District.	Number of acres of Land sold.	Amount of Sale.	Approximate Quantity remaining unsold.	Remarks.
		Acres.	$ cts.	Acres.	
Barrie Island	Manitoulin	100·00	20 00	1,099·00	
Gordon	"			2,109·00	
Gore Bay (T. plot)	"	3·75	37 50	2·50	
Mills	"	851·00	195 20	4,148·00	
Cockburn Island	"			25,340·00	
Dawson	"			9,148·00	
Robinson	"	100·00	20 00	29,889·00	
Brantford	Brant	·43	15 00		
Cayuga (T. plot)	Haldimand			108·31	
Cayuga	"			297·60	
Dunn	"			1,571·50	
Caledonia (T. plot)	"	3·59	50 00	51·29	
Alnwick	Northumberland	1·16	435 00		
Fort William Reserve	Thunder Bay	100·00	10,000 00		
Bronte	Halton			2·00	
Port Credit	Peel			·25	
Whitefish reserve	Algoma	286·00	616 00		
Deseronto	Hastings			5·80	
Shannonville (T. plot)	"			1·47	
Islands in the River St. Lawrence	Prov. Ontario	5·03	725 00	23·23	
Islands in the Otonabee river and lakes	"	57·15	725 00	1,873·54	
Islands in the Georgian Bay	Parry Sound	99·36	1,494 00		
South Baymouth (T. plot)	Manitoulin			133·29	
Meldrum Bay (T. plot)	"			78·73	
Islands in Bay of Quinté	Prince Edward	3·00	90 00		
Anderdon	Essex	·42	200 00		
Sarnia (T. plot)	Lambton	4·20	2,625 00		
Henvey Inlet		1,115·22	7,588 70		
Shawanaga reserve		101·86	2,262 70		
Magnetewan reserve		39·26	441 30		
Naiscoutaing		15·42	77 10		
		18,953·79	35,211 29	188,143·05	

QUEBEC.

Ouiatchouan	Lake St. John			2,311·12	
Dundee	Huntingdon	86·80	217 06	4,724·35	
Maniwaki (T. plot)	Wright	6·55	1,550 00	47·98	
Temiscamingue	Pontiac	6,276·40	3,187 23	6,395·88	
		6,369 75	4,954 29	13,479·33	

NEW BRUNSWICK.

Tobique	Victoria	400·00	400 00		
Red Bank	Northumberland	139·00	111 20		
Indian Point	"	25·00	28 75		
Edmundston	Madawaska	7·88	82 75		
		571·88	622 70		

INDIAN LAND STATEMENT showing the number of acres sold, &c., during the Year ended March 31, 1908—*Continued.*

MANITOBA.

Town or Township.	County or District.	Number of acres of Land sold.	Amount of Sale.	Approximate Quantity remaining unsold.	Remarks.
		Acres.	$ cts.	Acres.	
Gambler's reserve	Marquette			480·00	
				480·00	

SASKATCHEWAN.

Kamsack (T. plot)	Saltcoats	9·37	16,760 00	2·76	
Assiniboine reserve	Wolseley			320·50	
Stony reserve	Battleford			4,115·20	
Cote reserve		1·50	100 00		
		10·87	16,860 00	4,438·46	

ALBERTA.

Sharphead				685·20	
				685·20	

BRITISH COLUMBIA.

Upper Similkameen		94·88	2,307 80		
Tsimpsean		14,160·00	107,650 00		
Galiano Island		4·16	170 80		
		14,259·04	110,128 60		

General Remarks.

The land sold during the year amounted to 40,163·33 acres, which realized $167,776.88. The quantity of surrendered land in the hands of the department was approximatively 207,226·04 acres. The principal outstanding, on account of Indian Lands sold, amounted to $599,765.74, a considerable portion of which has not yet become due.

CENSUS RETURN.

CENSUS RETURN of Resident and Nomadic Indians: Denominations to which they belong, with approximate number belonging to each Denomination, as well as the number of Pagans in the Dominion of Canada, by Provinces, for the year ended March 31, 1908.

PROVINCE OF ONTARIO.

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Algonquins, Golden Lake	107				107					16	15	13	13	18	14	12	3	2	1
" Renfrew, North	198	*																	
Chippewas of the Thames	475	219	1	253		2				36	44	35	43	15	19	138	140	2	3
" Walpole Island	573	270		290	13					32	28	43	47	33	30	166	160	15	19
" Sarnia	286	53		233						25	23	30	24	11	13	79	68	4	9
" Kettle and Stony Point	130	54		73				3		12	12	13	14		5	35	31	3	5
" Georgina and Snake Island	107			107						9	5	6	5	5	4	30	28	8	7
" Rama	234			219	15					15	16	18	20	16	18	52	62	9	8
" Saugeen	405	4		364	37					30	23	33	31	27	28	100	108	14	11
" Nawash	380	13		222	145					29	21	37	31	30	13	109	104	3	3
" Beausoleil	259			184	75					20	28	26	29	20	16	52	59	5	4
Iroquois & Algonquins of Watha (Gibson)	143			143						11	15	14	18	10	6	32	32	5	
Moravians of the Thames	342			342						35	33	28	28	21	25	82	76	8	6
Mississaguas of Mud Lake	191			191						27	29	22	5	12	7	45	40	2	2
" Rice Lake	92			92						9	14	5	5	5	3	23	22	3	3
" Scugog	35			35						3	1	2	5		2	11	10		1
" Alnwick	251	6		243	2					28	16	23	20	13	12	61	66	8	4
" New Credit	267	17		225		7		18		12	15	21	18	24	8	76	74	11	8
Mohawks of the Bay of Quinté	1,338	1,280	35					23		90	104	119	140	87	56	333	326	47	36
Munsees of the Thames	112	50		62						6	6	12	13	7	6	30	26	4	2
Oneidas of the Thames	782	227		377		117		61		69	62	70	58	40	28	241	172	18	24
Pottawattamies of Walpole Island	176	77		90					9	12	15	16	14	9	11	50	40	4	5

* Nomadic.

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF ONTARIO—*Continued.*

Indians.	Census Return.	Religion.								Under 6 Years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Ojibbewas and Ottawas of Manitoulin and Cockburn Islands at:—																			
Cockburn Island	53				53					5	2	9	4	5	7	8	6	4	3
Sheshegwaning	166				166					11	14	18	19	11	10	38	35	3	4
West Bay	330				330					27	29	27	30	21	12	84	93	3	4
Sucker Creek	93	81			12					4	6	11	7	7	5	25	25	1	2
South Bay	63				63					4	6	8	5	1	7	14	16	2	
Sheguiandah	104	83			21					7	8	10	10	6	6	25	22	5	5
Sucker Lake	12				12											3	7	1	1
Wikwemikong (unceded) / Wikwemikongsing (unceded)	666				666					57	42	74	70	27	27	171	162	24	12
Obidgewong	9				1				8	2						4	3		
Ojibbewas of Lake Superior at:—																			
Fort William	280				240				40	19	21	34	34	22	16	53	72	5	4
Red Rock or Helen Island	231	38			193					22	25	34	20	14	16	41	54	3	2
Pays Plat	57				57					6	6	10	7	4	4	6	12	1	1
Lake Nipigon, Gull Bay and Isld Point	453	21			221				211	50	49	67	50	30	28	67	104	4	4
Pic River	218				218					24	23	24	26	16	10	42	49		4
Long Lake	251	10			196				45	24	31	28	38	10	16	42	50	6	6
Michipicoten and Big Heads	160	40			120					5	7	10	13	14	16	47	43	2	3
Thessalon River	128				128					7	4	9	5	13	11	35	38	4	2
Maganettawan	70				70					6	2	7	12	1	4	19	16	2	1
Spanish River No. 1	213				213					18	17	22	18	18	18	47	45	4	6
" 2	106	34			72					1	1	5	5	7	1	7	12	1	
" 3	363				363					31	20	42	33	20	24	86	101	3	3
Whitefish Lake	168			13	155					19	10	16	22	10	12	32	41	4	2
Mississagi River	172				172					9	15	12	16	12	15	43	45	4	1

Point Grondin	47			7	40					1	4	6	3	2	3	10	16	0	2
Serpent River	123				123					8	7	16	10	11	9	21	25	4	4
*French River																			
Tahgaiwinini	198				198					14	13	25	26	16	21	41	37	2	3
Whitefish River	92	52			40					5	6	12	13	4	5	19	22	3	3
Parry Island	98			39	46				13	5	6	18	8	5	5	17	29	2	3
Shawanaga	108			60	48					8	5	16	14	6	3	25	26	1	4
Henvey Inlet	170			42	128					6	14	21	10	14	5	44	48	3	5
Lake Nipissing	245				245					40	41	22	28	7	3	43	61		
Temogaming	97				97					13	9	6	5	1	2	21	36	2	2
Dokis	79				79					7	8	6	9	5	1	17	24	1	1
Garden River	444	198			246					20	22	42	39	35	44	105	103	21	13
Batchawana Bay	382	35		8	339					20	27	29	33	34	39	89	94	11	6
Six Nations on Grand River	4,236	1,530		716		899	17	194	880	281	286	401	381	281	257	1,089	1,064	95	101
Wyandottes of Anderson	1																		
Chippewas and Saulteaux of Treaty No. No. 3 at :—																			
Hungry Hall No. 1	31	7							24	3	2	2	2	2		9	11		
" 2	16	1			1				14	1	2		1		1	4	7		
Manitou Rapids No. 1	79								79	9	4	7	10	2	2	23	20		2
" 2	22								22	2		3	1	1		5	7	2	1
Long Sault No. 1	25	7							18	1	1	2	4			7	8	1	1
" 2	47	10							37	4	2	2	8	1		12	14	2	2
Little Forks	45	3							42	2	4	4	4	1	1	10	15	2	2
Couchiching	176	3			146				27	12	18	24	18	10	6	39	43	3	3
Stangecoming	51	1							50	2	4	6	10	3	5	8	10	1	2
Niacatchewenin	64								64	4	4	8	11	5	3	11	15	1	2
Nickickousemenecanning	41	1			4				36	2	7	6	4	3	1	5	11		2
Rivière la Seine	133								133	9	9	12	16	4	5	28	43	4	3
Lac la Croix	121				3				118	9	6	19	15	5	7	17	38	3	2
Lac des Mille Lacs	63				2				61	3	3	7	10	1	2	12	24	1	
Kawaiagamot (Sturgeon Lake)	24								24	1		5	3	2		6	7		
Wabigoon	97	6			7				84	6	10	10	15	5	4	16	27	2	2
Frenchman's Head	135	135								17	18	16	10	5	8	29	28	3	1
Lac Seul	403	363			18				22	47	49	51	50	9	23	93	72	6	3
Wabuskang	53	19			12				22	8	4	6	7	1	3	10	8	1	5
Grassy Narrows	133	40			66				27	22	13	15	10	4	4	28	29	3	5
Eagle Lake	65	7			2				56	5	7	8	8	3	2	15	15	1	1
The Dalles	62	34			15				13	8	4	4	6	1	3	16	17	2	1
Islington	213	150			8				55	22	20	21	16	4	6	63	54	4	3
Rat Portage	77	5			5				67	9	10	13	6		1	14	18	4	2
Northwest Angle No. 37	61	2							59	5	2	8	8	4	4	12	16	1	1
" " 33	52								52	4	7	9	6		2	9	12	1	2
" " 34	11								11			1			1	2	6		1
Big Island	151				3				148	18	11	21	17	6	6	35	34	2	1
Assabaska	147				5				142	18	10	13	15	4	15	32	34	3	3
Whitefish Bay	51	2			2				47	2	3	8	5	3	3	12	12	2	1
Shoal Lake No. 40	76	2	1						73	8	11	11	2	2	5	15	21	1	
" 39	68								68		10	15	8	3	2	12	15	1	2

*Reserve not occupied. Indians included in Henvey Inlet band.

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Concluded.*

PROVINCE OF ONTARIO *Continued.*

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Indians at Ignace	41	....	....	....	36	....	....	....	8	3	9	7	4	3	2	7	8	....	1
Indians of James Bay, Treaty No. 9 at :—																			
Abitibi	146	*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Matachewan	96	....	....	....	96	....	....	....	....	12	9	6	5	1	2	21	36	2	2
Matagami	94	76	....	....	18	....	....	....	....	7	8	8	9	11	9	20	22	....	....
Flying Post	106	105	....	....	1	....	....	....	....	11	9	8	6	6	4	25	35	2	....
Chapleau	141	129	....	....	12	....	....	....	....	14	5	23	19	11	10	24	35	....	....
New Brunswick House	136	136	....	....	....	....	....	....	....	17	12	12	23	9	9	27	34	2	1
Missinaibi	65	65	....	....	....	....	....	....	....	4	7	7	7	4	7	13	16	....	....
Long Lake	137	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Osnaburg	361	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Fort Hope	483	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Marten Falls	131	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
English River	71	*	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Albany	776	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Moose Factory	332	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Post	37	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	23,518	5,701	37	4,630	6,227	1,025	17	299	2,909	1,643	1,615	2,091	1,983	1,232	1,154	4,983	5,160	469	441

* No details.

NOTE.—The following Indians in the James Bay Treaty No. 9, are in Keewatin District, viz.: Osnaburg, 361; Fort Hope, 483; Marten Falls, 131, and Albany, 776; total, 1,751.

PROVINCE OF QUEBEC.

Abenakis of St. Francis	335	39	....	5	251	....	....	‡40	.....	16	20	43	39	30	17	74	74	12	10
" Becancour	27	.....	....	.....	27	.....	.....	.....	.....	.....	.....	1	1	2	.....	11	10	.....	2
Algonquins of River Desert	407	10	....	.....	397	...	....	.....	.....	20	34	31	44	30	40	91	105	5	7
" Timiskaming	238	.....	....	.....	238	.....	.....	.....	.....	23	22	22	21	15	20	48	54	6	7
Amalecites of Viger	109	.....	....	.....	109	.....	.....	.....	.....	5	3	5	4	29	19	14	27	2	1
Hurons of Lorette	474	1	6	.....	467	.....	.....	.....	.....	57	44	51	47	35	36	99	96	5	4
Iroquois of Caughnawaga	2,165	3	....	47	2,115	.....	.....	.....	.....	299	261	226	170	115	113	454	432	41	54
" St. Regis	1,475	.....	....	165	1,310	.....	.....	.....	.....	168	174	150	149	80	95	272	280	49	58
" Lake of Two Mountains	412	.....	....	294	118	.....	.....	.....	.....	49	41	42	35	15	13	113	90	4	10
Algonquins "	67	.....	....	9	58	.....	.....	.....	.....	4	4	4	7	1	4	20	18	2	3
Micmacs of Maria	105	.....	....	.....	105	.....	.....	.....	.....	14	12	13	12	5	6	19	20	2	2
" Restigouche	493	.....	....	.....	493	.....	.....	.....	.....	50	51	46	47	27	23	107	108	16	18
Indians of Labrador Peninsula, viz.:—																			
Montagnais and Naskapees at :—																			
Bersimis	513	.....	....	.....	513	.....	.....	.....	.....	66	73	50	50	32	35	104	90	6	7
Escoumains	42	.....	....	.....	42	.....	.....	.....	.....	4	3	6	8	.....	1	9	7	2	2
Natashquan	*76	.....	....	.....	76	.....	.....	.....	.....	10	9	6	12	9	4	12	12	.....	2
Godbout	40	.....	....	.....	40	.....	.....	.....	.....	†	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Romaine	*176	.....	....	.....	176	.....	.....	.....	.....	†	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lake St. John	572	47	....	.....	525	.....	.....	.....	.....	72	73	62	64	36	32	115	104	6	8
Mingan	*241	.....	....	.....	241	.....	.....	.....	.....	†	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Augustine	*181	.....	....	.....	181	.....	.....	.....	.....	†	.....	.....	.....	.....	.....	.....	.....	.....	.....
Seven Islands and Moisie	*377	.....	....	.....	377	.....	.....	.....	.....	†	.....	.....	.....	.....	.....	.....	.....	.....	.....
Têtes de Boule Indians of St. Maurice, County of Champlain	203	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pontiac, Unorganized	631	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Labelle and Wright Counties	116	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unorganized Territories of Three Rivers and St. Maurice	360	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unorganized Territories of Chicoutimi and Saguenay	1,253	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quebec County at St. Ambrose	346	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Lorette	9	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Unorganized	13	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlevoix County at St. Urbain	7	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Point Au Pic	6	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	11,469	100	6	520	6,859	....	....	40	....	857	824	758	710	461	458	1,562	1,527	158	195

* (Last year's figures). † No details. ‡ Adventists.

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF NEW BRUNSWICK.

Indians.	Census Return.	Religion.								Under 6 Years.		From 6 to 15 yrs., inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Micmacs of Kent County at :—																			
Big Cove	308				308					35	25	31	30	14	6	74	72	10	11
Indian Island	35				35					3	1	3	2	5	4	9	7		1
Buctouche	23				23					1	1	2	2	2	1	7	5		2
Micmacs of Northumberland County at :																			
Burnt Church	216				216					23	25	18	18	9	9	53	49	9	3
Eel Ground	150				150					4	15	14	19	10	10	42	30	4	2
Red Bank	56				56					6	5	3	2	4	4	14	14	2	2
Micmacs of Gloucester County at :—																			
Bathurst	34				34					4	4	3	5			8	7	1	2
Micmacs of Restigouche County at :																			
Eel River	83				83					13	14	7	10		3	13	20	1	2
Micmacs of Westmorland County at :—																			
Fort Folly (reserve) and Vicinity	61				61					5	5	6	6	3	2	16	15	1	2
Amalecites of York County at :																			
St. Mary's	131				131					6	16	17	13	14	9	23	21	4	8
Kingsclear	112				112					13	15	15	10	4	2	23	18	5	7
Amalecites of Carleton County at :—																			
Woodstock	66				66					4	5	7	9	3	6	15	14	1	2
Amalecites of St. John County	21				21					3	2	1	3	4	1	3	3	1	
Amalecites of Charlotte County	47				47					2	6	6	5	4	3	7	10	3	1
Amalecites of Kings County at :—																			
Apohaqui	12				12						1	1	2	1	2	2	3		
Amalecites of Sunbury County at :—																			
Oromocto	73				73					7	6	8	10	7	4	16	13	1	1

Amalecites of Queen's County at :—																				
Upper and Lower Gagetown	35				35					2	4	5	6	5	2	6	4	1		
Amalecites of Victoria County at :—																				
Tobique	198				198					14	18	17	16	5	6	60	54	6	2	
Amalecites of Madawaska County at :—																				
Edmundston	50				50					3	3	4	10	2	5	9	8	5	1	
Indians of Nova Scotia, at King's, St. John, Charlotte, York and Queen's Counties	150				150					12	10	14	15	9	10	35	32	5	8	
Total	1,861				1,861					160	181	182	193	105	89	435	399	60	57	

PROVINCE OF NOVA SCOTIA.

Micmacs of Yarmouth County at :—																				
Yarmouth (reserve)	80				80					2	5	10	6	10	10	17	14	3	3	
Micmacs of Shelburne County at :—																				
Sable River	14				14															
Shelburne River	15				15					2	3	4	6	4	2	13	8	1		
Clyde River	1				1															
Barrington River	13				13															
Micmacs of Richmond County at :—																				
Chapel Island (reserve)	113				113					10	9	16	12	7	7	22	21	5	4	
Micmacs of Colchester County at :—																				
Millbrook (reserve)	104				104					4	4	15	10	4	5	27	25	6	4	
Micmacs of Hants County at :—																				
Indian Brook (reserve)	100				100					8	9	11	12	3	5	22	19	5	6	
Micmacs of Antigonish County at :—																				
Summerside	21				21															
Afton (reserve)	84				84															
Pomquet (reserve)	61				61					18	13	24	22	25	20	45	40	5	4	
Micmacs of Guysborough County at :—																				
Guysborough	50				50															
Micmacs of Halifax County at :—																				
Sheet Harbour and Musquodoboit	47				47					8	5	6	6	2	4	6	9		1	
Elmsdale	69				69					6	5	5	4	1	2	22	18	4	2	
Enfield	44				44					4	4	3	1	4	3	10	11	2	2	
Wellington	19				19					1	2		2	2	4	4	3	1		
Fall River	19				19					3		2	2	1	1	6	3	1		
Dartmouth	35				35					3	4	4	2	2		8	7	3	2	
Bedford	16				16									1	2	5	7	1		
Micmacs of Annapolis County at :—																				
Lequille	25				25															
Middleton	22				22															
Lawrencetown	10				10					11	7	8	6	4	3	16	7	3	4	
Milford	6				6															
Stragglers	6				6															

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

Indians.	Census Return.	Religion.								Under 6 Years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Micmacs of Kings County at :—																			
Cambridge (reserve)	13				13														
Berwick	10				10														
Aylesford	5				5														
Blue Mountain	8				8														
Brooklyn Corner	14				14					9	7	6	8	5	7	15	13	3	3
Louisville	10				10														
Wolfville	6				6														
Bishopville	10				10														
Micmacs of Cumberland County at :—																			
Franklin Manor (reserve) Vicinity	59				59					4	4	5	3	9	9	10	11	2	2
Southampton	12				12					3	2	1			1	2	3		
River Hebert	15				15					2	3	1	1	1	1	3	2	1	
Springhill Junction	9				9					2	1	1			1	2	2		
Amherst	7				7					1	1	1		1		1	1	1	
Micmacs of Cape Breton County at :—																			
Cariboo Marsh (reserve)	90				90					13	7	16	8	5	3	17	20	1	
North Sydney	48				48					5	4	8	7	1	2	8	11	1	1
Eskasoni	122				122					10	10	11	8	20	13	18	27	1	4
Micmacs of Lunenburg County at :—																			
New Germany (reserve)	64				64					6	5	5	6	6	5	13	14	1	3
Bridgewater	10				10						1	2	1			1	1	2	2
Lunenburg Town	7				7							1			1	1	2	1	1
Gold River (reserve)	5				5								1			2	2		
Micmacs of Queen's County at :—																			
Milton	54				54					2	1	8	8	7	6	9	8	2	3
Mill Village	12				12					2	1		1	1	1	3	3		
Wild Cat (reserve)	8				8					2	2				1	1	1		1
Caledonia	9				9						1	2	1		1	1	2	1	

Micmacs of Victoria County at —																				
Middle River (reserve)	98				98					6	7	15	7	7	3	24	27	2		
Micmacs of Digby County at :—																				
Bear River (reserve)	87				87					13	12	9	11	10	7	17	18	7	3	
Weymouth	20				20															
Micmacs of Inverness County at :—																				
Whycocomagh (reserve)	127				127					8	15	15	15	4	6	31	28	3	2	
Malagawatch (reserve)	44				44					3	3	7	4	2	5	8	10	2		
Micmacs of Pictou County at :—																				
Fisher's Grant (reserve)	135				135					15	11	13	11	8	9	30	28	5	5	
Indian Island (reserve)	37				37					3	4	4	4		1	10	10		1	
Total	2,129				2,129					189	172	239	196	157	151	450	436	76	63	

PROVINCE OF PRINCE EDWARD ISLAND.

Micmacs of Prince County at :—																				
Lennox Island (reserve)	212				212					21	22	12	17	12	13	57	49	5	4	
Micmacs of Morell (reserve) and Kings and Queens Counties	64				64					4	5	5	4	5	4	16	17	2	2	
Total	276				276					25	27	17	21	17	17	73	66	7	6	

PROVINCE OF BRITISH COLUMBIA.

Cowichan Agency.																				
Sooke	26				26					1	2	2	3	3	3	7	4		1	
Cheerno (Beecher Bay)	42				21			21		6	5	5	4	3	2	7	9		1	
Esquimalt	17			15	2					3	4	1	1	1	1	2	2		2	
Songhees	97			30	67					9	12	10	6	2	4	24	24	2	4	
Malakut	8				8							1	2			2	2		1	
Tsekum	19				19					1	1	2	1			7	7			
Panquechin	58				58					3	1	3	3	6	2	18	22			
Tsartlip	60				60					3	2	10	8	5	6	13	13			
Tsawout	89				89					2	5	14	16	5	6	20	21			
Kilpanlus	4				4					1	1						1	1		
Comeakin	60				60					2	1	2	4		1	22	24	2	2	
Clemclemaluts	125			18	107					7	8	22	13	2	3	31	37	1	1	
Khenipsin	42			12	30					3	2			2	5	14	13	1	2	
Koksilah	16			4	12					1	1			1		6	5	1	1	
Quamichan	270			70	200					26	21	26	24	7	7	73	80	2	4	
Somenos	103			13	90					13	12	10	7	6	8	23	22	1	1	
Hellelt	30			5	9				16	3	5	2	2	1	2	6	7	1	1	
Siccameen	29				29					2		4	5			10	8			
Kulleets	67				67					8	7	6	4	1	3	18	17	1	2	

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF BRITISH COLUMBIA—*Continued.*

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years, upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
COWICHAN AGENCY.—*Con.*																			
Lyacksum	81				81					6	9	4	13	9	6	15	15	2	2
Lhuaelehe	12				12						1	4			1	3	3		
Penelakut	140				140					15	7	10	10	6	6	43	42	1	
Tsussie	53				53					4	4	7	7	4	3	12	12		
Nanaimo	160			160						22	21	15	14	12	17	27	31		1
Snonowas	14			8					6		2	1		1		4	5		1
Qualicum	14			14							1	1		2	2	4	3		1
Comox	44		41		3					3	4	1	4	1	1	15	14	1	
Galiano Island	31				31					3	2	2	4	2		10	8		
Mayne Island	24				24					2	2	4	4	1	1	5	5		
Discovery Island	26				26					2	3	6	4			5	6		
Cowichan Lake	3			3												1	2		
Total	1,764		41	352	1,328			21	22	151	146	175	163	83	90	448	464	16	28
NORTHWEST COAST AGENCY.																			
Massett	362	362								40	43	34	42	12	2	94	84	4	7
Skidegate	242			242						23	24	14	14	6	3	78	70	5	5
Kincolith	250	250								16	17	25	34	7	7	62	74	3	3
Kittex and Andegulay	74	74								4	4	7	4	2	3	24	21	2	3
Lackalsap	144	142		2						15	17	13	19	5	2	33	34	3	3
Kitwintshilth	56	56								2	3	4	5	2	3	18	17	1	1
Aiyansh	172	172								23	18	17	14	7	5	44	41	2	1
Kitkaedamax	108	108								4	2	11	9	6	4	35	31	2	4
Port Simpson	703			703						54	71	82	75	18	15	185	161	20	22

Metlakatla	194	194								25	19	21	25	10	2	46	40	1	5
Kitkatla	207	207								14	11	28	16	14	9	54	52	3	6
Hartley Bay or Kithahta	80			80						9	7	9	9	3		21	21	1	
China Hat or Kitasoo	78			78						8	6	10	9	2	1	22	20		
Port Essington	191			191						15	15	24	26	6	7	50	42	3	3
Kitlope	67								67	3	4	10	6	2		22	16	2	
Kitimat	268			268						18	19	27	28	9	12	82	69	2	2
Bella Bella	318			318						34	31	27	22	15	14	88	78	4	5
Kinisquit	63								63	3	2		3	2	2	27	24		
Bella Coola and Palamey	216			20					196	14	14	20	12	5	2	84	58	4	3
Oweekayno	102			102						9	4	6	9	2	3	34	33		2
Total	3,895	1,565		2,004					326	333	331	389	381	135	96	1,103	986	64	77
KOOTENAY AGENCY.																			
St. Mary's	218				218					32	12	26	26	7	6	48	49	3	9
Tobacco Plains	57				57					5	2	1	7		4	18	12	1	7
Lower Columbia Lake	76				76					6	9	7	8	3	1	18	17	2	5
Lower Kootenay (Flat Bow)	162				162					8	19	13	18	6	4	42	44	5	3
Kinbaskets (Shuswap tribe)	57				57					4	5	11	5	4	1	8	11	6	2
Arrow Lake (West Kootenay)	25				25					2		3	4	2		7	6		1
Total	595				595					57	47	61	68	22	16	141	139	17	27
KAMLOOPS-OKANAGAN AGENCY.																			
Adam's Lake	192				192					15	15	19	19	9	9	53	53		
Ashcroft	45	45								3	3	2	2	2	2	15	15	1	
Bonaparte	150				150					13	13	12	13	6	6	42	43	1	1
Boothroyd	156	156								12	12	10	10	7	7	49	46	2	1
Boston Bar	146	85			61					10	10	12	12	6	5	46	45		
Cook's Ferry	185	185								13	13	14	14	8	7	56	59	1	
Deadman's Creek	120				120					12	12	12	11	9	9	25	27	1	2
Kamloops	241				241					20	20	19	19	9	9	65	65	8	7
Kanaka Bar	54	54								3	3	4	4	4	3	16	16		1
Lytton	467	467								37	38	40	40	25	26	123	122	8	8
Nicomen	49	49								4	4	4	5	2	2	14	14		
Nicola (Lower)	360	325			35					25	25	30	28	19	19	100	99	7	8
" (Upper)	192				192					16	16	15	15	11	11	48	48	6	6
Neskainlith	161				161					14	14	13	13	7	7	48	43	2	
North Thompson	125				125					10	10	10	11	10	10	31	31	1	1
Okanagan	227				227					12	12	14	13	11	10	74	74	4	3
Oregon Jack Creek	18	18								2	2	2	2			5	5		
Osoyoos	61				61					5	5	5	5	3	2	17	18	1	
Penticton	157				157					18	18	17	16	10	10	33	33	1	1
Little Lake Shuswap	95				95					12	11	10	9	4	4	21	20	2	2
Similkameen (Upper)	44				44					3	3	2	3	3	2	14	13		1
" (Lower)	134				134					12	12	10	10	8	8	35	35	2	2
Siska Flat	29	29								1	1	2	2	1	1	11	10		

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

BRITISH COLUMBIA—*Continued.*

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
KAMLOOPS OKANAGAN AGENCY.—*Con.*																			
Skuppa	17	17	....	....	....	....	....	....	....	1	1	1	1	....	1	6	6	....	....
Spallumcheen	161	....	....	....	161	....	....	....	....	18	17	16	16	10	10	34	34	3	3
Spuzzum	158	158	....	....	....	....	....	....	....	11	11	13	13	9	9	43	44	2	3
Cold Water	108	....	....	....	108	....	....	....	....	8	8	10	9	7	7	25	25	4	5
Total	3,852	1,588	..	.. ..	2,264	....	....	....	....	310	309	318	315	200	196	1,049	1,043	57	55
KWAWKEWLTH AGENCY.																			
Kasimo	66	....	....	....	....	....	....	....	66	2	1	....	.. ..	1	....	26	24	5	7
Klawitsis	102	....	....	....	....	....	....	....	102	5	5	4	6	3	2	44	32	1	....
Kwatsino	21	....	....	....	....	....	....	....	21	2	2	1	2	....	..	7	7	....	....
Kwawshola	47	....	....	....	....	....	....	....	47	3	2	7	....	1	....	17	17	..	..
Kwawkewlth	99	99	....	....	....	....	....	....	....	9	7	13	8	5	2	31	23	....	1
Mamalilikulla	100	8	....	....	....	....	....	....	92	5	6	5	1	2	....	40	38	1	2
Newakta	98	....	....	....	....	....	....	....	98	9	8	9	6	2	1	33	28	1	1
Nimkish	141	141	....	....	....	....	....	....	....	9	6	17	7	3	5	46	43	2	3
Nuwitti	70	....	....	....	....	....	....	....	70	3	3	7	3	1	....	25	25	1	2
Tanakteuk	101	....	....	....	....	....	....	....	101	6	3	12	11	3	2	33	26	3	2
Tsawantiano	221	221	....	....	....	....	....	....	....	9	11	21	18	9	3	74	68	4	4
Wawalitsum	33	....	....	....	....	....	....	....	33	2	1	2	1	3	1	12	11	....	....
Wiwaiaikum	80	....	....	80	....	....	....	....	....	2	1	8	6	2	1	26	26	3	5
Waiwaiaikai	115	....	....	115	....	....	....	....	....	5	8	8	11	8	4	34	30	2	5
Total	1,294	469	....	195	....	....	....	..	630	71	64	114	80	43	21	448	398	23	32

West Coast Agency.																			
Ahousaht	236		100		10				126	9	18	26	28	10	6	66	68	3	2
Clayoquot	217			80	90				47	11	11	18	13	3	13	58	63	13	14
Checklesit	62				50				12		3	9	10		2	19	14	2	3
Ehatisaht	93				20				73	2	6	10	9	1	4	27	29	1	4
Ucluelet	134		100						34	11	11	15	14	7	4	32	34	3	3
Hesquiaht	142				142					15	7	18	11	7	8	33	35	3	5
Uchucklesit	37		3		7				27	3	2	5	8			7	9	1	2
Kelsemaht	75			10	10				55	1	5	11	3		1	22	19	5	3
Kyuquot	255				150				105	6	6	14	21	4	5	91	95	8	5
Matchitlacht	57				25				32		2	7	3	1	2	16	22	2	2
Nootka	143				100				43	4	2	10	12	5	5	39	59	5	2
Nitinaht	195			160				22	13	17	6	19	24	6	12	41	55	10	5
Nuchatlity	49				25				24	3	2	3	2		3	15	15	3	3
Oiaht	148		100					5	43	9	12	13	14	6	4	32	43	8	7
Opitchesaht	51		40						11	3	6	9	4	3	2	8	13	1	2
Toquaht	27		7						20	3	1	3	1	1	1	6	9	2	
Pacheenaht	53								53	1	2	7	1	4	3	12	20	1	2
Tsesaht	119		75						44	4	4	8	16	8	6	28	28	10	7
Total	2,093		425	250	629			27	762	102	106	205	194	66	81	552	630	81	76
Williams Lake Agency.																			
Alexandria	52				52					7	7	4	3	3	4	15	7	1	1
Alkali Lake	179				179					26	28	7	10	13	12	35	36	6	6
Anaham	224				224					26	24	12	11	16	15	40	41	20	19
Anderson Lake	67				67					8	6	3	4	7	5	17	15	1	1
Bridge River	104				104					10	9	5	4	8	8	28	24	5	3
Canoe Creek	164				164					19	16	7	8	18	13	35	36	6	6
Cayoosh Creek No. 1	31				31					2	6	2	2	5	4	3	4	1	2
" " 2	11	11								1	1	2		2	2	1	1		1
Clinton	48				48					6	3	4	3	4	4	6	9	4	5
Dog Creek	20				20					5	5	1	2	1	2	1	1	1	1
Fountain	212				212					25	21	8	9	20	18	46	49	8	8
High Bar	56				56					9	9	4	2	4	6	8	8	4	2
Canim Lake	77				77					9	6	5	5	4	4	18	21	3	2
Lillooet No. 1	57				57					5	3	5	3	4	3	14	15	3	2
" 2	10	10								2	2	2	1	1		1	1		
Pavilion	68				68					5	4	4	4	7	7	15	13	4	5
Quesnel	58				58					6	6	4	3	2	3	6	15	6	7
Seton Lake, Mission No. 1	74				74					10	10	6	3	6	5	19	9	3	3
" Enias " 2	1				1													1	
" Schloss " 5	34				34					4	4	1	2	3	4	6	6	2	2
" Nicait " 6	49				49					5	5	3	3	5	4	12	8	2	2
Soda Creek	81				81					10	11	5	5	6	6	16	20	1	1
Stones	96				96					13	14	4	4	7	7	20	24	2	1
Toosey	62				62					12	9	3	3	5	7	12	10	1	
Williams Lake	160				160					18	17	8	9	10	7	38	37	8	8
Total	1,995	21			1,974					243	226	109	103	161	150	412	410	93	88

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF BRITISH COLUMBIA—*Continued.*

Indians.	Census Return.	Religion.								Under 6 Years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
BABINE AND UPPER SKEENA RIVER AGENCY.																			
Kitwangar	156	148							8	5	6	13	13	8	9	47	47	4	1
Kitwancool	68	58							10	3	3	6	7	6	6	16	16	2	3
Kitsegukla (Old and New Village)	96			60				31	5	5	5	11	11	6	6	22	23	4	3
Getanmax (Hazelton)	249	239							10	6	7	21	22	15	15	77	78	4	4
Glen Vowell	88							88		5	5	13	12	4	4	21	21	1	2
Kispiax	216			200					16	7	7	25	26	8	8	63	64	4	4
Kisgegas	239	189							50	6	7	22	22	11	10	74	74	6	7
Kuldoe	38			13					25	2	2	4	4	1	2	9	9	2	3
Hagwilget Village	161				161					6	6	13	13	11	11	47	47	4	3
Moricetown (Lachalsap)	157				157					5	5	12	12	10	10	48	48	3	4
Fort Babine	153				153					5	5	11	11	12	12	46	46	3	2
Old Fort Babine	134				134					4	5	12	12	9	9	40	40	1	2
Yucutee (Portage between Babine and Stuart lakes)	16				16					1	1	1	2	2	2	3	3		1
Thatee	64				64					3	2	7	7	5	6	15	15	2	1
Pintee	46				46					2	2	4	5	3	3	13	13	1	
Grand Rapids	25				25					1	1	3	3	2	1	6	6	1	1
Tsisthainli (Lac Tremblour)	21				21					1		3	3	2	2	4	4	1	1
Stuart's Lake Village	197				197					7	6	18	18	12	12	58	58	4	4
Stella	60				60					4	4	6	7	4	4	14	14	2	1
Fraser's Lake Village	64				64					4	4	7	7	5	5	15	15	1	1
Stony Creek Village	110				110					5	5	11	11	8	8	29	29	2	2
Fort George Village	123				123					6	6	12	13	5	5	36	36	2	1
Tsistlatho (Black Water)	68				68					2	2	6	6	4	4	21	21	1	1
McLeod's Lake	99				99					5	5	12	12	9	9	22	22	2	1
Fort Grahame (Nomadic)	89				89					4	4	10	11	4	4	24	24	2	2

Connolly Lake	118	....	...	... ..	118	.....	....	....	.....	4	4	11	11	8	8	34	34	2	2
Na-anees (two bands north of Connolly lake, semi-nomadic)	153	...	..	.....	153	.....	....	...	..	6	6	15	15	9	9	43	43	4	3
Chislatta Lake	76	.....	....	.....	76	.....	....	....	.....	4	4	4	4	3	3	26	26	1	1
Francis Lake	32	.....	....	.....	32	.....	....	....	.....	1	1	4	3	1	1	10	10	.....	1
Total	3,116	634	....	273	1,966	.....	...	119	124	119	120	297	303	187	188	883	886	66	67
CASSIAR DISTRICT AGENCY.																			
Tahltans	232	40	....	....	37	.....	....	....	155	16	14	23	18	10	6	59	57	14	15
FRASER RIVER AGENCY.																			
Aitchelitz	4	....	....	4	.....	.....	....	....	.. ..	.....	.....	.....	.....	.....	.....	.....	1	2	....	1
Burrard Inlet, No. 3 reserve	35	... .	....	....	35	.....	....	....	.....	3	2	4	5	1	1	8	9	1	1
Cheam	98	.....	....	1	97	.....	....	....	.....	10	14	9	10	8	8	16	18	2	3
Chehalis	119	5	....	....	114	.....	....	....	.....	16	17	5	4	9	6	23	30	4	5
Coquitlam	26	.....	....	.....	26	.....	....	....	.....	3	4	3	2	1	1	6	6	.....	
Douglas	70	.....	....	.....	70	.....	....	....	.....	6	5	5	4	5	4	15	20	2	4
Ewa-woos	18	.....	....	.....	18	.....	....	....	.....	2	1	1	3	1	1	2	4	1	2
False Creek	48	....	....	.....	48	.....	....	....	.....	3	3	2	.....	4	2	15	14	2	3
Homalko	94	.....	....	.....	94	.....	....	....	.....	8	9	14	15	7	6	15	16	2	2
Hope	82	2	....	1	79	.....	....	....	.....	7	5	8	7	7	5	17	23	1	2
Katsey	77	.....	....	. .	77	.....	....	....	.....	6	10	5	5	5	5	16	20	2	3
Klahoose	70	... .	....	.....	70	... .	....	....	10	7	6	7	5	6	6	12	15	2	4
Kapilano	41	.....	....	.....	31	... .	....	....	.....	3	3	2	2	2	2	12	13	1	1
Kwawkwawapilt	19	... .	....	.....	19	.....	....	....	...	2	2	2	.....	1	1	5	5	...	1
Langley	40	.....	....	.....	40	...	....	....	....	2	3	4	3	2	2	9	11	2	2
Mission, Burrard Inlet	219	.....	....	....	219	.....	....	....	.....	29	25	22	15	16	17	39	43	5	8
Musqueam	96	....	...	9	84	.....	....	....	3	7	7	10	8	10	9	17	20	4	4
Matsqui	44	.....	....	.....	44	.....	....	....	...	3	4	4	4	5	4	8	9	1	2
New Westminster	47	... .	....	.....	47	.....	....	....	.....	6	7	3	3	5	2	8	12	.....	1
Nicomen	13	.....	....	.....	13	.....	....	....	.....	2	2	1	.. ..	.....	1	2	4	.....	1
Ohamil	54	8	....	3	43	.....	....	....	.....	4	5	5	6	5	6	10	10	1	2
Pemberton Meadows	261	.....	....	....	261	.....	....	....	.....	27	33	26	22	20	15	53	56	5	4
Popkum	12	12	....	.....	.....	.....	....	....	.....	2	.....	3	....	2	1	2	2	.....	.....
Semiahmoo	37	.....	....	.....	37	.....	....	....	.....	3	4	4	3	1	2	8	10	1	1
Sechelt	242	.....	....	.....	242	.....	....	....	.....	26	27	25	22	17	15	51	49	4	6
Sumass	50	.....	....	26	24	.....	....	....	.....	4	4	3	4	3	2	12	14	1	3
Scowlitz	43	.....	.	.....	43	..	....	....	....	3	6	7	5	4	2	5	7	1	3
Squiahla	16	...	....	2	14	.....	....	....	.....	1	3	1	2	.....	1	3	4	...	1
Skweahm	27	.....	....	....	27	.....	....	....	.....	2	3	3	4	1	1	5	7	.....	1
Sliammon	105	.....	....	.....	105	.....	....	....	.....	13	10	16	14	6	8	15	15	4	4
Squawtits	46	13	....	12	21	.....	....	....	.....	5	5	3	3	4	3	7	8	3	5
Skwawmish, Howe Sound	29	.....	..	.....	9	.....	....	....	20	3	2	1	2	.....	.....	6	8	4	3
Skwah	105	....	....	4	101	..	....	....	...	9	7	10	13	8	7	20	22	3	6
Skookum Chuck	101	.....	....	....	101	..	....	....	.....	10	9	10	11	7	6	19	18	4	7
Samahquam	67	...	....	.....	67	.....	....	....	.....	7	8	6	8	4	5	9	13	3	4

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF BRITISH COLUMBIA—*Concluded.*

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years, upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
FRASER RIVER AGENCY.—*Con.*																			
Skulkayn	31	....	....	27	4	....	....	....	....	2	3	3	2	1	1	8	8	1	2
Skawahlook	16	....	....	....	16	....	....	....	....	2	3	1	3	1	....	3	3	....	....
Seymour Creek	19	....	....	3	16	....	....	....	....	1	2	2	....	2	2	4	4	1	1
Skway	26	3	....	....	23	....	....	....	....	2	3	3	1	1	1	7	8	1	....
Texas Lake	30	2	....	....	28	....	....	....	....	2	3	3	3	2	3	5	6	1	2
Tsawwassen	49	....	....	....	49	....	....	....	....	6	6	4	4	3	4	7	8	1	2
Soowahlie	48	....	....	39	9	....	....	....	....	4	5	4	5	3	3	9	10	1	2
Tyeachten	43	5	....	18	20	....	....	....	....	3	4	4	4	3	3	9	10	1	2
Wharnock	28	....	....	....	28	....	....	....	....	2	3	3	2	2	1	7	7	....	3
Yahweakwioose	25	....	....	4	21	....	....	....	....	2	3	1	2	1	1	5	6	1	3
Yale	78	17	....	....	61	....	....	....	....	3	5	6	8	7	6	14	20	4	5
Total	2,848	67	..	152	2,595	....	....	....	33	273	294	268	248	205	182	549	627	78	124
PROVINCE OF MANITOBA.																			
Chippewas and Crees of Treaty No. 1, at:																			
Roseau River, including Rapids	181	..	....	....	67	..	....	....	114	13	16	19	17	10	9	46	40	5	6
Swan Lake, including Indian Gardens	109	....	....	....	93	....	....	....	16	6	10	7	13	2	7	26	29	3	6
Long Plain	121	..	....	....	....	....	....	....	121	16	13	14	14	3	..	24	28	4	5
St. Peter's	1,168	864	....	....	126	72	....	58	48	118	127	106	110	67	64	268	260	21	25
Brokenhead River	152	115	....	....	18	....	....	....	19	8	11	11	16	8	9	45	45	4	1
Fort Alexander	493	210	....	....	246	....	....	....	37	60	59	42	40	23	11	114	124	8	12
Sandy Bay	291	10	....	....	217	....	....	....	10	27	25	39	31	20	32	61	45	6	5
Total, Treaty No. 1	2,515	1,199	....	....	821	72	....	58	365	248	261	238	235	133	132	584	571	51	62
Sioux at Portage la Prairie	127	....	106	....	....	....	....	....	21	10	16	8	12	7	4	31	23	6	10

Chippewas and Crees of Treaty No. 2, at :—																		
Lake Manitoba	123	25	....	.....	90	....	....	....	8	16	9	13	12	8	6	30	23	3	3
Ebb and Flow Lake	62	15	...	...	47	....	....	....	...	11	4	7	9	2	2	13	11	2	1
Fairford	195	165	..	...	....	....	....	30	..	18	20	28	22	8	12	38	38	6	5
Little Saskatchewan	123	99	...	.....	24	....	....	....	...	14	13	8	15	11	8	28	24	.....	2
Lake St. Martin	148	101	....	...	....	....	....	20	27	14	21	22	10	12	10	30	23	4	2
Crane River	42	6	....	...	6	....	...	....	30	4	1	8	..	3	2	8	14	2	.....
Waterhen River	51	...	....	.....	51	..	....	....	..	10	2	2	5	2	3	12	13	1	1
Total, Treaty No. 2	744	411	...	.....	218	....	....	50	65	87	70	88	73	46	43	159	146	18	14
Chippewas, Saulteaux and Crees of Treaty No. 3 at Buffalo Bay	30	.....	...	...	1	....	...	....	29	2	3	4	.....	2	3	7	6	1	2
Treaty No. 4.																			
BIRTLE AGENCY.																			
Keeseekoowenin	128	..	95	.....	31	....	....	....	2	7	11	18	16	5	3	24	41	2	1
Waywayeecappo	182	.....	70	.....	41	..	....	....	71	21	14	24	18	3	8	36	44	7	7
Gambler	12	.....	.....	.....	12	....	...	...	.....	2	2	2	2	.....	.....	2	2	.....	...
Rolling River	93	..	18	.....	8	.....	...	....	67	5	8	11	5	2	1	23	32	4	2
Birdtail (Sioux)	74	.....	63	1	....	.....	....	....	10	4	5	8	10	.....	3	17	18	3	6
Total	489	.. ..	246	1	92	....	....	....	150	39	40	63	51	10	15	102	137	16	16
OAK RIVER (SIOUX) AGENCY.																			
Oak River	279	64	1	13	4	.....	....	....	197	23	20	25	21	15	12	70	66	8	19
Oak Lake	68	.. ..	31	.....	...	....	....	....	37	6	3	8	8	3	2	15	17	3	3
Turtle Mountain	45	.....	...	...	.....	....	....	....	45	1	4	7	5	2	.....	9	9	4	4
Total	392	64	32	13	4	....	....	...	279	30	27	40	34	20	14	94	92	15	26
Pine Creek	216	2	....	.....	214	....	....	..	.....	26	26	19	35	15	8	34	47	3	3
Shoal River (including Steep Point Rock, Swan Lake, Dog Island, Dawson Bay, ½ mile west of Shoal River)	161	130	..	.....	13	....	....	....	18	17	21	16	16	8	6	28	36	4	9
Total, Treaty No. 4	1,258	196	278	14	323	....	....	....	447	112	114	138	136	53	43	258	312	38	54
Chippewas, Saulteaux and Crees of Treaty No. 5 at :—																			
Black River	67	67	....	.....	....	....	....	....	...	7	10	7	5	4	3	11	14	5	1
Hollowwater River	95	57	....	.....	20	....	....	....	18	9	11	9	9	5	6	16	17	6	7
Bloodvein River	52	.....	....	12	.....	....	....	....	40	7	6	5	4	5	2	7	8	1	7
Grand Rapids	124	100	..	...	24	....	....	....	.....	12	9	14	16	8	9	23	27	4	2
Fisher River	420	.....	...	420	.....	.....	...	...	.....	36	39	48	43	24	30	92	98	6	4
Jackhead River	64	34	....	.....	.....	.....	....	....	30	5	8	8	4	6	4	11	13	3	2

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c. *Continued.*

PROVINCE OF MANITOBA.—*Concluded.*

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years, upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Chippewas, Saulteaux and Crees of Treaty No. 5 at:																			
Berens River	286			275	11					28	17	45	34	26	19	51	56	5	5
Poplar River	148			143						18	8	20	16	11	6	28	33	1	2
Norway House	518	80		418	20					30	28	69	68	37	36	102	140	4	4
Cross Lake	370			205	165					36	38	45	41	29	24	64	85	3	5
Little Grand Rapids (Berens River)	149			15					134	13	15	23	17	13	8	25	29	2	4
Pekangekum	127								127	15	20	13	18	5	8	18	26	2	2
Peter Ballendine	476	96			380					42	44	56	54	38	39	89	103	5	6
Chemawawin (Crees)	137	137								16	17	12	12	6	8	29	30	4	3
Moose Lake (Crees and Saulteaux)	119	118							1	11	10	8	19	6	7	24	30	2	2
The Pas	410	390			9			11		31	36	25	26	38	39	85	110	8	12
Shoal Lake (Crees)	73	73								9	8	10	7	3	5	14	16		1
Red Earth	129	103							26	14	15	18	14	12	5	23	21	2	5
Cumberland	162	147			15					10	21	20	23	7	6	30	39	3	3
Total, Treaty No. 5	3,921	1,402		1,488	644			11	376	349	360	455	430	283	264	742	895	66	77

PROVINCE OF SASKATCHEWAN.

Treaty No. 4.																			
PELLY AGENCY.																			
Coté	252		160		27				65	29	22	38	36	9	3	49	60	1	5
Key's	87	37			10				40	9	14	10	15	3	2	14	17	3	
Keeseekoose	126	7	12		58				49	15	15	11	17	4	3	23	33	5	
Valley River	64		14		32				18	10	8	5	7	4	3	11	12	2	2
Total	529	44	186		127				172	63	59	64	75	20	11	97	122	11	7

MOOSE MOUNTAIN AGENCY.																		
White Bear	198	3	50		14				131	26	24	15	11	5	2	49	50	4	12
CROOKED LAKE AGENCY.																		
Ochapowace	113		28		23				62	11	13	11	8	6	4	27	30	1	2
Kahkewistahaw	95		22		20				53	10	14	9	9	3	4	20	23	1	2
Cowessess	189		18		165				6	23	24	17	19	11	11	32	45	4	3
Sakimay Little Bone	147		13		17				117	14	15	15	12	9	8	30	36	2	6
Total	544		81		225				238	58	66	52	48	29	27	109	134	8	13
QU'APPELLE AGENCY.																		
Piapot	158		33		90				35	10	13	14	15	9	7	33	40	8	9
Standing Buffalo (Sioux)	219				100				119	15	25	28	27	9	8	42	43	10	12
Pasquah	131		20		88				23	16	11	9	9	5	8	31	33	2	7
Muscowpetung	86		29		33				24	9	13	4	4	7	7	13	17	6	6
Peepeekeesis	112	5	22		46				39	15	17	4	8	5	5	28	24	3	3
Okanase	58		18		26				14	5	9	5	6	3	2	10	15	1	2
Star Blanket	39		5		10				24	2	6	5	4	1	1	6	11	2	1
Little Black Bear	57		11		27				19	5	6	3	6	2	1	13	15	4	2
Total	860	5	138		420				297	77	100	72	79	41	39	176	198	36	42
ASSINIBOINE AGENCY.																		
Carry-the-kettle	208		125		35				48	17	21	12	13	11	19	44	53	8	10
Sioux at Moosejaw (non-treaty)	115	No details.																	
Total	323		125		35				48	17	21	12	13	11	19	44	53	8	10
TOUCHWOOD HILLS AGENCY.																		
Muscowequan	133	1			70				62	18	15	14	9	6	8	27	32	1	3
George Gordon	199	140			25				34	24	19	17	14	8	7	53	49	3	5
Day Star	73								73	11	8	8	7	2	2	16	14	2	3
Poor Man	117	16			10				91	13	15	8	18	1	1	23	32	4	2
Fishing Lake	105		1		8				96	17	11	8	10	3	2	24	26	1	3
Total	627	157	1		113				356	83	68	55	58	20	20	143	153	11	16

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF SASKATCHEWAN—*Concluded.*

Indians.	Census Return.	Religion.								Under 6 Years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Treaty No. 6.																			
DUCK LAKE AGENCY.																			
Nut Lake (Yellow Quill)	210	.....	.....	.....	2	.....	.....	.....	208	19	30	29	17	13	8	43	48	1	2
One Arrow	99	.....	.....	.....	81	.....	.....	.....	18	9	9	18	2	11	5	17	23	1	4
Okemasis	28	5	.....	.....	20	.....	.....	.....	3	3	3	3	5	.....	.....	5	9	.....	.....
Beardy	136	.....	17	.....	109	.....	.....	.....	10	6	21	19	18	3	5	23	33	5	3
John Smith	148	147	.....	.....	1	.....	.....	.....	.....	7	19	18	17	7	5	33	37	4	1
James Smith	236	234	.....	.....	.....	.....	.....	.....	2	25	32	27	22	7	12	50	48	6	7
Kinistino	81	.....	.....	.....	.....	.....	.....	.....	81	12	11	10	10	3	7	14	13	.....	1
Total	938	386	17	..	213	.....	.....	.....	322	81	125	124	91	44	42	185	211	17	18
CARLTON AGENCY.																			
William Twatt (Sturgeon Lake)	150	30	2	.....	7	.....	.....	.....	111	18	11	19	9	12	5	31	40	2	3
Petequakey	110	.....	5	.....	105	.....	.....	.....	.....	12	10	9	13	9	7	24	24	1	1
Mistawasis	132	6	87	.....	39	.....	.....	.....	.....	13	15	12	8	8	7	31	35	1	2
Ahtahkakoop	219	200	1	.....	14	.....	.....	.....	4	18	27	24	27	10	13	40	50	3	7
Kenemotayoo	124	65	.....	.....	24	.....	.....	.....	35	11	11	14	14	11	6	21	29	3	4
Pelican Lake Indians	63	9	.....	..	4	.....	.....	.....	50	7	3	7	6	6	8	7	16	2	1
Wahspaton (Sioux, non-treaty)	102	.....	27	.....	.....	.....	.....	.....	75	3	4	13	14	4	3	24	30	4	3
James Roberts (Lac la Ronge)	534	524	.....	.....	10	.....	.....	.....	.....	47	59	84	86	26	27	82	109	7	7
William Charles (Montreal Lake)	194	192	.....	.....	2	.....	.....	.....	.....	18	16	18	26	14	20	35	43	2	2
Total	1,628	1,026	122	.....	205	.....	.....	.....	275	147	156	260	203	100	96	295	376	25	30

BATTLEFORD AGENCY.																				
Mosquito	57	Stony			6				64	5	7	5	4	3	3	20	24	3	2
Bear's Head	19																		
Lean Man																			
Red Pheasant	159	108			43				8	12	15	12	14	10	7	40	41	5	3
Sweet Grass	76	30			35				11	5	6	3	3	4	2	24	25	1	3
Poundmaker	106	8			96				2	8	9	12	9	9	5	25	21	3	5
Little Pine and Lucky Man	123	50			46				27	8	6	11	8	8	8	27	38	5	4
Moosomin	130	37			58				35	10	7	12	11	11	10	28	34	4	3
Thunderchild	117	40			56				21	6	12	9	8	6	5	28	34	5	4
Kopwayawakenum	88				74				14	12	8	9	6	6	5	13	22	3	4
Total	875	279			414				182	66	70	73	63	57	45	205	239	29	28
ONION LAKE AGENCY.																			
Seakaskootch	310	65			134				111	34	43	31	28	11	17	64	63	6	13
Sweet Grass (attached)	26	26								3	4	2	1	1		5	9	1	
Weemisticooseahwasis	91	22			66				3	8	10	8	11	5	2	19	22	2	4
Ooneepowhayo	103	32			52				19	12	13	9	5	1	4	27	22	2	8
Puskeeahkeewein	26	5			21					2	2	2	4		2	4	7		3
Keeheewin	145	4			141					19	22	16	12	4	4	31	27	3	7
Kinoosayo (Chipewyan)	273				273					23	36	36	27	8	9	58	64	3	9
Total	974	154			687				133	101	130	104	88	30	38	208	214	17	44

PROVINCE OF ALBERTA.

Treaty No. 6.

EDMONTON AGENCY.																				
Enoch	116			13	103					13	12	9	11	2	4	32	25	1	7
Michel	94				94					9	7	10	8	4	10	15	24	3	4
Alexander	176				176					20	16	16	14	6	6	43	50	2	3
Joseph	150				150					12	23	18	20	9	10	23	27	3	5
Paul (White Whale Lake)	153			153						16	26	17	12	8	4	30	34	2	4
Total	689			166	523					70	84	70	65	29	34	143	160	11	23
SADDLE LAKE AGENCY.																				
Saddle Lake	148			105	43					10	21	15	12	14	10	30	32	2	2
Blue Quill	118			9	109					11	16	9	9	12	11	23	25	1	1
James Seenum	320			244	76					33	37	25	24	24	32	67	72	3	3

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF ALBERTA—*Continued.*

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years inclusive.		From 16 to 20 years inclusive.		From 21 to 65 years inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
SADDLE LAKE AGENCY.—*Con.*																			
Lac la Biche	12				12					2	1	2	1	2		2	2		
Chipewyan	84				84					9	7	10	6	8	4	15	21	2	2
Beaver Lake	105				105					13	15	11	5	7	6	25	23		
Total	787			358	429					78	97	72	57	67	63	162	175	8	8
HOBBEMA AGENCY.																			
Samson	406			248	142				16	57	35	50	46	17	15	86	84	3	13
Ermineskin	181				181					27	16	15	16	8	11	40	40	3	5
Louis Bull	82			65	17					10	11	12	11	3	2	14	18		1
Montana (Little Bear)	76			16	1				59	10	5	15	6	3	3	11	17	4	2
Total	745			329	341				75	104	67	92	79	31	31	151	159	10	21
Treaty No. 7.																			
BLACKFOOT AGENCY.																			
Running Rabbit	384				260				124	37	37	31	18	28	19	92	105	3	14
Yellow Horse	433	237							196	38	32	40	40	52	33	92	90	5	11
Total	817	237			260				320	75	69	71	58	80	52	184	195	8	25

SARCEE AGENCY.																			
Bull Head	203	30	....	.....	10	....	....	...	163	13	9	18	11	8	9	57	62	6	10
STONY AGENCY.																			
Stony Reserve	640	.....	...	640	.....	..	...	....	.....	66	84	65	65	19	17	139	163	5	17
PEIGAN AGENCY.																			
Peigans	470	68	....	.....	145	.....	....	....	257	66	58	37	41	21	11	108	98	9	21
BLOOD AGENCY.																			
Bloods	1,178	150	....	....	150	.. ...	....	....	878	129	108	121	99	59	45	261	309	11	36

NORTHWEST TERRITORIES.

Treaty No. 8.																			
Crees and Chipewyans at Fort McMurray	143	....	....	.....	143	...	....	....	.....	....	....	.....	. ..	.....	.....	.....	.....	.....	.....
Chipewyans at Fond du Lac	311	.....	....	.....	311	.....	....	....	.....	....	....	.....	....	.....	.....	.....	.. ..	.....	....
Beavers at Dunvegan	125	10	....	....	90	.....	....	..	25	.. ..	.....	. ...	.....	.....	.....	.....	....	.....	..
Crees at Little Red River	68	.....	....	.....	68	.....	....	....	.....	....	. ..	.....	.....	.. ..	.....	.....	.. ..	.....	.. ..
Chipewyans at Fort Chipewyan	336	. ..	....	.....	336	.....	....	....	.....	....	.....	.....	...	.....	.....	.....	.. ..	.....	.. ..
Crees at Fort Chipewyan	222	.....	....	....	222	.....	....	..	.....	....	....	.....	.....	.....	.....	. ..	.. ..	.....	....
Chipewyans at Smith Landing	193	.....	...	...	193	.....	....	....	. .	....	.....	.....	.....	.....	.....	.....	.. ..	.....	.....
Crees at Wabiscow	219	44	...	.....	175	.....	....	....	.. ..	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crees at Peace River Landing	56	14	...	.....	42	.....	....	....	..	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beavers at Vermilion, Peace River	122	22	....	.....	100	.....	....	....	..	....	.....	.....	.....	.....	.....	.....	.. ..	.....	.....
Crees at Vermilion, Peace River	120	10	....	...	110	.. ..	....	...	....	*	.....	.....	.....	.....	.....	.....	....	.....	.. ..
Crees at Lesser Slave Lake	327	27	....	.....	300	.....	...	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crees at Sturgeon Lake	165	.....	....	.....	165	....	..	....	....	....	... ..	.....	.....	.....	.....	.....	.. ..	.....	....
Beavers at Fort St. John	101	.	....	....	75	.....	....	....	26	....	.....	...	.....	....	..	.....	.....	.....	.....
Crees at Whitefish Lake	72	36	....	.....	36	.....	....	...	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Slaves of Upper Hay River, Vermillon	234	.....	....	.....	234	.....	....	....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Slaves of Lower Hay River	112	56	....	.....	56	.....	....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chipewyans at Fort Resolution	115	.....	...	....	115	.....	....	....	.....	...	.....	.....	...	....	.....	.. ..	.....	....	.....
Yellowknives at Fort Resolution	205	.....	....	....	205	.....	....	....	.....	....	.....	.....	.....	.....	.....	. ..	.....	.....	.....
Dogribs at Fort Resolution	193	.....	....	.....	193	.....	....	....	.....	....	.....	.....	.....	.....	...	.....	.....	..	.....
Stragglers	28	.....	....	.....	28	.....	....	....	..	....	....	.....	.....	...	....	.....	.....	.....	.....
Total, Treaty No. 8	3,467	219	....	....	3,197	.....	..	....	51	.....	....	.....	.....	.....	.....	.....	.. ...	.....	.....

* No details.

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

NORTHWEST TERRITORIES—*Concluded.*

Indians.	Census Return.	Religion.								Under 6 Years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Treaty No. 10.																			
Canoe Lake, Clear Lake, English River, Barren Land, Lac la Hache — Athabasca District	90				90					9	5	9	12	6	6	14	21	4	4
	176				176					13	23	24	22	3	7	33	44	3	4
	150				150					17	12	14	26	6	9	25	37		4
	232				232					27	22	26	43	10	12	38	50	2	2
	97				97					8	9	16	11	4	9	17	21		2
Total, Treaty No. 10	745				745					74	71	89	114	29	43	127	173	9	16
Athabaska District	516																		
McKenzie District	4,149																		
Keewatin District	4,464																		
Ungava District	5,060																		
Franklin District (formerly Arctic Coast, Esquimaux)	2,500																		
Non-treaty Indians where no agents	165																		
Total	16,854																		

Indians of Yukon Territory at:—																			
Selkirk	Northern Yukon	66	66	...	...	...	...	...	...	...	3	9	4	2	6	8	19	15	...	...
Tatlumon Lake or Lower Pelly		23	23	...	...	...	...	...	...	...	2	...	4	1	3	2	5	6	...	...
Mooseshide		91	91	...	...	...	...	...	...	...	5	8	7	11	8	4	28	20	...	...
McQuesten		50	50	...	...	...	...	...	...	...	3	3	9	8	2	1	10	14	...	...
*Upper Pelly		105	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
‡Peel River		70	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Duncan or Lancing Creek		58	...	...	...	58	...	...	...	...	8	3	5	4	1	...	21	15	1	...
Salmon River		99	†	...	...	...	...	...	...	...	12	4	13	10	4	5	30	19	1	1
Lake Teslin		74	...	...	...	...	...	...	74	...	6	5	9	6	3	4	21	19	...	1
Tagish—Carcross		46	45	...	...	1	...	...	...	...	3	3	1	1	4	1	17	15	...	1
Tagish—Whitehorse		23	...	...	...	...	...	...	...	...	1	1	5	3	1	1	5	6	...	...
Hootchi—Champagne's Landing	Southern Yukon	108	†	...	...	...	...	...	...	...	4	4	10	11	7	2	33	35	2	...
Hootchi—Whitehorse		23	...	...	...	...	...	...	...	...	3	1	...	3	3	...	6	6	1	...
Laberge		41	...	...	...	...	...	...	...	...	4	6	5	2	2	5	9	‖		
Mission School Carcross		18	18	...	...	...	...	...	...	...	1	...	9	8	...	...	...	...	...	...
Big Lake (Kluane)		40	...	...	...	...	...	...	...	40	1	4	1	2	2	5	12	13	...	...
Total		§ 935	468	...	...	1	...	...	74	40	56	51	82	72	46	38	216	183	5	3
Estimated number of Indians in the Yukon Territory concerning whom no details have been received		2,367	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total, Yukon Territory		3,302	468	...	...	1	...	...	74	40	56	51	82	72	46	38	216	183	5	3

PROVINCE OF BRITISH COLUMBIA.

West Coast Agency	2,093	...	425	250	629	...	...	27	762	102	106	205	194	66	81	552	630	81	76
Fraser River Agency	2,848	67	...	153	2,595	...	...	...	33	273	294	268	248	205	182	549	627	78	124
Babine and Upper Skeena River Agency	3,116	634	...	273	1,966	...	...	119	124	119	120	297	303	187	188	883	886	66	67
Williams Lake Agency	1,995	21	...	...	1,974	...	...	...	...	243	226	109	103	161	150	412	410	9	88
Northwest Coast Agency	3,895	1,565	...	2,004	...	...	...	...	326	333	331	389	381	135	96	1,103	986	64	77
Kootenay Agency	595	...	...	...	595	...	...	...	...	57	47	61	68	22	16	141	139	17	27
Cowichan Agency	1,764	...	41	352	1,328	...	...	21	22	151	146	175	163	83	90	448	464	16	28
Kamloops-Okanagan Agency	3,852	1,588	...	...	2,264	...	...	...	...	310	309	318	315	200	196	1,049	1,043	57	55
Kwawkewlth Agency	1,294	469	...	195	...	...	...	...	630	71	64	114	80	43	21	448	398	23	32
Cassiar District Agency	232	40	...	...	37	...	...	...	155	16	14	23	18	10	6	59	57	14	15
Nomadic Indians about	3,280	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand Total	24,964	4,384	466	3,227	11,388	...	...	167	2,052	1,675	1,657	1,959	1,873	1,112	1,026	5,644	5,640	509	589

* This band contains 26 men, 20 women and 59 children. ‡ This band comes to Dawson four or five times a year to trade. † No religion. ‖ No details.
§ The details of the 935 Indians shown above have been received from the R. N. W. Mounted Police.

CENSUS RETURN of Resident and Nomadic Indians; Denominations to which they belong, &c.—*Continued.*

PROVINCE OF MANITOBA.

Indians.	Census Return.	Religion.								Under 6 years.		From 6 to 15 years, inclusive.		From 16 to 20 yrs., inclusive.		From 21 to 65 yrs., inclusive.		From 65 years upwards.	
		Anglican.	Presbyterian.	Methodist.	Roman Catholic.	Baptist.	Congregationalist.	Other Christian Beliefs.	Pagan.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Treaty No. 1	2,515	1,199	...	....	821	72	.....	58	365	248	261	238	235	133	132	584	571	51	62
" 2	744	411	.....	.....	218	.....	.....	50	65	87	70	88	73	46	43	159	146	18	14
" 3	30	.....	.....	.....	1	.....	.....	.....	29	2	3	4	.....	2	3	7	6	1	2
" 4	1,258	196	278	14	323	.....	.....	.....	447	112	114	138	136	53	43	258	312	38	54
" 5	3,921	1,402	....	1,488	644	.....	.....	11	376	349	360	455	430	283	264	742	895	66	77
Sioux at Portage la Prairie	127	.....	106	....	.....	.....	.....	....	21	10	16	8	12	7	4	31	23	6	10
Grand Total	8,595	3,208	384	1,502	2,007	72	.....	119	1,303	808	824	931	886	524	489	1,781	1,953	180	219

PROVINCE OF SASKATCHEWAN.

Pelly Agency	Treaty No. 4	529	44	186	....	127	.....	...	....	172	63	59	64	75	20	11	97	122	11	7
Moose Mountain Agency		198	3	50	.....	14	.....	...	....	131	26	24	15	11	5	2	49	50	4	12
Crooked Lake Agency		544	.....	81	.....	225	.....	.....	....	238	58	66	52	48	29	27	109	134	8	13
Qu'Appelle Agency		860	5	138	.....	420	.....	.....	....	297	77	100	72	79	41	39	176	198	36	42
Assiniboine Agency		323	....	125	.....	35	.....	.....	....	48	17	21	12	13	11	19	44	53	8	10
Touchwood Hills Agency		627	157	1	.....	113	.....	.....	....	356	83	68	55	58	20	20	143	153	11	16
Duck Lake Agency	Treaty No. 6	938	386	17	.....	213	.....	.....	....	322	81	125	124	91	44	42	185	211	17	18
Carlton Agency		1,628	1,026	122	....	205	.....	.....	....	275	147	156	200	203	100	96	295	376	25	30
Battleford Agency		875	279	....	.....	414	.....	.....	...	182	66	70	73	63	57	45	205	239	29	28
Onion Lake Agency		974	154	....	....	687	.....	.....	....	133	101	130	104	88	36	38	208	214	17	44
Grand Total		7,496	2,054	720	.....	2,453	.....	.....	....	2,154	719	819	771	729	357	339	1,511	1,750	166	220

PROVINCE OF ALBERTA.

Edmonton Agency	Treaty No. 6	689	.....	....	166	523	.....	.....	.....	.....	70	84	70	65	29	34	143	160	11	23
Saddle Lake Agency	Treaty No. 6	787	.....	..	358	429	.....	.....	.....	.....	78	97	72	57	67	63	162	175	8	8
Hobbema Agency	Treaty No. 6	745	.....	....	329	341	.....	.....	.....	75	104	67	92	79	31	31	151	159	10	21
Blackfoot Agency	Treaty No. 7	817	237	....	.....	260	.....	.....	.....	320	75	69	71	58	80	52	184	195	8	25
Sarcee Agency	Treaty No. 7	203	30	....	.....	10	.....	.....	.....	163	13	9	18	11	8	9	57	62	6	10
Stony Agency	Treaty No. 7	640	.....	....	640	.....	.....	.....	.....	.....	66	84	65	65	19	17	139	163	5	17
Peigan Agency	Treaty No. 7	470	68	....	.....	145	.....	.....	.....	257	66	58	37	41	21	11	108	98	9	21
Blood Agency	Treaty No. 7	1,178	150	....	.....	150	.....	.....	.....	878	129	108	121	99	59	45	261	309	11	36
Grand Total		5,529	485	....	1,493	1,858	.....	.....	.....	1,693	601	576	546	475	314	262	1,205	1,321	68	161

NORTHWEST TERRITORIES.

Treaty No. 8		3,467	219	....	.....	3,197	.....	.....	.....	51	†	.....	.....	.....	.....	.....	.....	.....	.....	.....
" 10		745	.....	....	.....	745	.....	.....	.....	.....	74	71	89	114	29	43	127	173	9	16
Non-treaty Indians where no Agents		165	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Athabaska District		516	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mackenzie District		4,149	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Keewatin District		4,464	†	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ungava District		5,060	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin District (formerly Arctic Coast Esquimaux)		2,509	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, Northwest Territories		21,066	219	....	.....	3,942	.....	.....	.....	51	74	71	89	114	29	43	127	173	9	16
*Yukon Territory		3,302	468	....	....	1	.....	....	74	40	56	51	82	72	46	38	216	183	5	3

GRAND RECAPITULATION.

Ontario	23,518	5,701	37	4,630	6,222	1,025	17	299	2,909	1,643	1,615	2,091	1,983	1,232	1,154	4,983	5,160	469	441
Quebec	11,469	100	6	520	6,859	.....	....	40	.....	857	824	758	710	461	458	1,562	1,527	158	195
Nova Scotia	2,129	.....	.....	.....	2,129	.....	.....	.....	.....	189	172	239	196	157	151	450	436	76	63
New Brunswick	1,861	.....	.....	.....	1,861	.....	.....	.....	.....	160	181	182	193	105	89	435	399	60	57
Prince Edward Island	276	.....	.....	.....	276	.....	.....	.....	.....	25	27	17	21	17	17	73	66	7	6
British Columbia	24,964	4,384	466	3,227	11,788	.....	.....	167	2,052	1,675	1,657	1,959	1,873	1,112	1,026	5,644	5,640	509	589
Manitoba	8,595	3,208	384	1,502	2,007	72	....	119	1,303	808	824	931	886	524	489	1,781	1,953	180	219
Saskatchewan	7,496	2,054	720	.....	2,453	.....	.....	.....	2,154	719	819	771	729	357	339	1,511	1,750	166	220
Alberta	5,529	485	....	1,493	1,858	.....	.....	.....	1,693	601	576	546	475	314	262	1,205	1,321	68	161
Northwest Territories	21,066	219	....	.....	3,942	.....	.....	.....	51	74	71	89	114	29	43	127	173	9	16
Yukon Territory	3,302	468	....	.....	1	.....	....	74	40	56	51	82	72	46	38	216	183	5	3
Grand Total	110,205	16,619	1,613	11,372	39,001	1,097	17	699	10,202	6,807	6,817	7,665	7,252	4,354	5,066	17,987	18,608	1,707	1,970

* Vide details on page 89. † No details.

AGRICULTURAL AND INDUSTRIAL STATISTICS.

REALTY OF INDIANS.

Agency.	Lands and Sources from which Indians derive their support.					
	Cleared but not under cultivation.	Under actual cultivation.	Number engaged in farming.	Number engaged in hunting, trapping and fishing.	Number engaged in other industries.	Number engaged in stock-raising
Ontario.	Acres.	Acres.				
Grand River Superintendency—Six Nations	23,476	11,220	412	.....	.....	412
Parry Sound Superintendency	839	485	55	43	51	.....
New Credit (Mississaguas) Agency	1,965	3,725	42	2	35	.....
Walpole Island Agency	33,425	1,005	57	35	.....	40
Sarnia "	1,584	3,215	110	42	45	52
Caradoc "	4,459	10,512	63	.....	.....	.....
Moravian "	1,195	970	75	30	20	60
Manitowaning "	6,025	2,710	105	66	114	.....
Gore Bay "	3,813½	1,845½	254	13	291	.....
Thessalon "	260	401	.....	2	132	.....
Sault Ste. Marie "	2,448	1,570	39	80	153	.....
Port Arthur "	236	276	.....	276	50	.....
Sturgeon Falls "	.....	375	.....	.....	.....	.....
Golden Lake "	200	50	6	4	.....	.....
Tyendinaga "	9,600	6,300	264	1	231	.....
Lake Simcoe "	539	234	10	90	9	9
Cape Croker "	3,500	1,500	145	25	100	145
Saugeen "	4,000	1,180	75	.....	100	.....
Alnwick "	100	2 490	9	.....	.....	9
Mud Lake "	302	250	9	10	.....	.....
Bice Lake "	855	575	14	9	.....	.....
Rama "	404	760	17	8	32	.....
Christian Island "	300	1,000	40	40	25	40
Scugog "	120	620	5	6	7	2
Kenora "	621	61	.....	136	67	.....
Fort Frances "	210	134	.....	481	165	18
Savanne "	1,673	73	.....	150	60	.....
Total	102,149½	53,536½	1,806	1,549	1,687	787

QUEBEC.						
Lake of Two Mountains Agency	355	2,088				
Caughnawaga "	3,444	4,803	175		392	
St. Regis "	2,688	3,019	600	34	900	
Viger "						
St. Francis "	234½	435	10	12	335	
Maria "	46	136	10	10	15	10
Restigouche "		684	50	7		
River Desert "	96	779	149	113	145	
Jeune Lorette "	26¾					
Becancour "	9	57¾	2			
Timiskaming "	100	177	20	10	16	11
Bersimis "	365	10				
Mingan "			No Returns received.			
Lake St. John "	453	830	69	250		
Total	7,817¼	13,018¾	1,085	436	1,803	21

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

REALTY OF INDIANS.

Agency.	PUBLIC BUILDINGS, PROPERTY OF THE BAND.										
	Saw Mills.	Grist Mills.	Threshers.	Engines.	Other Machinery.	Churches.	Council Houses.	School Houses.	Driving Sheds.	Other Buildings.	Ferries.	Value of Public Properties, etc.
ONTARIO.												$ cts.
Grand River Superintendency—Six Nations					2		1	10	2	2		22,000 00
Parry Sound Superintendency	1					6	1	5	2	6		7,900 00
New Credit (Mississaguas) Agency					5	2	1	1	2	3		8,250 00
Walpole Island Agency							2	3		2	2	2,000 00
Sarnia "						5	2	3	2	1	1	8,650 00
Caradoc "							3	6	1	13		4,725 00
Moravian "							1	1				1,700 00
Manitowaning "					2	8	3	9	1	2		19,750 00
Gore Bay "			1			1	1	2		1		6,900 00
Thessalon "						4	1	5				7,150 00
Sault Ste. Marie "						6	1	4		1		10,500 00
Port Arthur "						3	3	6		2		10,200 00
Sturgeon Falls "						2		2				3,700 00
Golden Lake "						1		1	2			1,075 00
Tyendinaga "						3	1	4	4	1		19,800 00
Lake Simcoe "			1			1	1	1	1	1		2,500 00
Cape Croker "			1	1	1	2	1	3	2	4		15,950 00
Saugeen "						4	1	3	4	10		18,200 00
Alnwick "						1	1	1	1			6,250 00
Mud Lake "			1			1	1	1	2	6		11,030 00
Rice Lake "						1	1	1	1			4,000 00
Rama "						1	1	1	2	1		3,500 00
Christian Island "			1			2	1	1	1			6,000 00
Scugog "						1			1			5,000 00
Kenora "								2				525 00
Fort Frances "						1		6				3,550 00
Savanne "						1		5				490 00
Total	1		5	1	10	57	29	87	31	56	3	$211,265 00

| | | |

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

REALTY OF INDIANS.

Agency.	Private Fencing and Buildings.																	
	Acres Fenced.	Dwellings, Stone.	Dwellings, Brick.	Dwellings, Frame.	Dwellings, Log.	Shanties.	Barns.	Horse Stables.	Driving Sheds.	Cattle Stables.	Pig Sties.	Store Houses.	Root Houses.	Milk Houses.	Corn Cribs.	Value of Private Fencing.	Value of Private Buildings.	Total Value of Private Fencing and Buildings.
ONTARIO.																$ c.	$ c.	$ c.
Grand River Superintendency —Six Nations	43,096	3	31	314	427	16	226	377	92	188	180	62	44	118	66	436,960 00	565,390 00	1,002,350 00
Parry Sound Superintendency.	475	.....	.....	38	98	10	17	28	1	30	18	1	1	10	..	750 00	17,300 00	18,050 00
New Credit (Mississaguas) Agency	6,000	.....	3	47	18	3	30	20	13	12	8	4	5	5	1	7,095 00	29,900 00	36,995 00
Walpole Island Agency	505	...	...	41	37	.....	4	58	2	.....	23	52	2	7	46	13,000 00	25,000 00	38,000 00
Sarnia "	6,891	.....	3	91	8	2	26	44	12	13	21	34	3	4	9	9,450 00	43,600 00	53,050 00
Caradoc "	14,800	3	9	207	108	16	51	136	31	67	39	42	19	23	52	29,500 00	93,000 00	122,500 00
Moravian "	2,250	.....	1	30	63	1	11	50	3	24	62	10	16	8	32	24,100 00	11,200 00	35,300 00
Manitowaning "	3,035	.....	...	24	277	39	74	176	6	48	160	40	118	....	16	6,800 00	43,300 00	50,100 00
Gore Bay "	1,791½	.....	.....	12	103	13	46	80	21	32	93	56	38	9	1	7,120 00	19,665 00	26,785 00
Thessalon "	921	.....	.....	32	69	22	17	21	.....	19	14	2	14	.....	.....	6,318 00	11,205 00	17,523 00
Sault Ste. Marie "	1,734	.....	.....	47	87	14	53	54	.....	37	24	18	18	.....	.....	1,900 00	19,200 00	21,100 00
Port Arthur "	37	.....	.....	43	79	35	.....	7	.....	6	.....	.....	.....	2	.....	716 00	47,690 00	48,406 00
Sturgeon Falls "	252	.....	.....	9	34	38	17	24	...	.....	4	22	.....	.....	.....	450 00	8,950 00	9,400 00
Golden Lake "	100	...	...	1	19	4	6	2	6	4	2	3	6	.....	.....	200 00	2,400 00	2,600 00
Tyendinaga "	14,200	1	3	230	14	4	99	148	44	164	90	6	11	23	20	9,800 00	107,800 00	117,600 00
Lake Simcoe "	572	.	.....	14	19	1	8	17	2	12	9	5	5	5	....	770 80	6,900 00	7,670 80
Cape Croker "	1,400	3	....	35	40	3	40	45	2	30	10	1	3	8	....	30,000 00	39,920 00	69,920 00
Saugeen "	1,180	...	1	71	40	....	27	75	15	23	30	1	10	....	...	1,200 00	9,000 00	10,200 00
Alnwick "	2,440	.....	.....	47	8	2	17	20	2	4	2	....	1	1	....	4,880 00	17,450 00	22,330 00
Mud Lake "	615	.....	2	23	12	1	12	11	2	11	4	....	2	2	....	3,500 00	18,550 00	22,050 00
Rice Lake "	792	.....	...	11	14	.....	10	11	..	8	7	....	5	1	....	3,900 00	14,675 00	18,575 00
Rama "	961	.....	....	47	30	1	31	30	5	3	9	30	10	3	..	3,000 00	12,000 00	15,000 00
Christian Island "	1,000	.....	....	5	50	3	12	35	8	25	25	6	20	10	20	7,000 00	7,000 00	14,000 00
Scugog "	800	.....	....	6	1	2	5	7	...	3	2	.....	.....	.....	.....	1,348 00	2,000 00	3,448 00
Kenora "	26	...	...	1	136	.....	....	27	....	11	.....	11	.....	.....	.....	61 50	6,825 00	6,886 00

Fort Frances	"	1,522	.. ..	.....	2	128	30	.. .	39	.....	17	. .....	.....	.....	.....	.....	1,710 00	10,700 00	12,410 00
Savanne	"	22	....	....	.....	119	.....	.....	9	...	6	....	4	.....	.....	.....	33 00	3,495 50	3,528 50
Total		108,017½	10	53	1,428	2,038	260	839	1,551	267	797	836	410	351	239	263	611,562 30	1,194,115 50	1,805,677 80
QUEBEC.																			
Lake of Two Mountains Agency		684	2	.....	74	10	.....	27	57	22	17	25	12	8	24	9	2,923 00	29,483 00	32,406 00
Caughnawaga Agency		2,613	59	2	388	48	6	119	316	.....	.....	113	12	2	10	14	7,839 00	188,890 00	439,996 00
St. Regis	"	500	.....	.....	965	35	.....	64	63	60	46	5	2	.....	.....	60	1,100 00	63,100 00	64,200 00
Viger	"	...	.....	.....	.....	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,025 00	2,025 00
St. Francis	"	412	....	2	72	.....	.....	13	5	3	20	4	30	....	2	....	1,000 00	45,000 00	46,000 00
Maria	"	145	.. ..	.....	18	3	.. ..	16	8	8	17	19	2	3	4	....	220 00	1,250 00	1,470 00
Restigouche	"	680	.....	.....	70	21	4	62	26	.....	64	40	9	....	13	....	1,200 00	1,000 00	2,200 00
River Desert	"	370	.....	.....	1	27	31	16	18	3	11	4	3	7	5	....	2,720 00	8,245 00	10,965 00
Jeune Lorette	"	15	1	1	80	...	.....	7	7	.....	7	10	.....	.....	.....	...	150 00	26,000 00	26,150 00
Becancour	"	52	.....	....	6	.....	1	3	2	.....	2	2	...	1	2	....	100 00	1,000 00	1,100 00
Timiskaming	"	147	.....	....	8	18	6	5	10	.....	7	2	10	3	....	....	450 00	6,900 00	7,350 00
Bersimis	"	16	.....	...	.....	48	5	.....	2	.....	4	.....	....	1	.....	.....	13,606 00	500 00	14,106 00
*Mingan	"	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lake St. John	"	1,061	....	. ...	36	18	2	28	.....	3	.....	14	1	8	16	....	3,075 00	15,948 00	19,023 00
Total		6,695	62	5	1,718	249	55	360	514	99	195	238	81	33	76	83	34,383 00	332,341 00	666,971 00

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS.

Agency.	Agricultural Implements, Vehicles, &c.										
	Ploughs.	Harrows.	Seed drills.	Cultivators.	Land Rollers.	Mowers.	Reapers and Binders.	Horse Rakes.	Fanning Mills.	Threshing Machines.	Tool Chests.
ONTARIO.											
Grand River Superintendency—Six Nations	380	310	80	140	92	166	114	160	195	6	48
Parry Sound Superintendency	26	32	...	...	...	3	...	1	5	...	...
New Credit (Mississaguas) Agency	38	22	8	25	7	15	11	13	14	1	2
Walpole Island Agency	70	70	3	80	3	40	4	32	30	1	2
Sarnia "	55	53	16	29	...	28	20	26	35	1	24
Caradoc "	139	119	41	123	23	65	36	49	47	2	58
Moravian "	61	60	9	60	4	16	5	18	10	...	4
Manitowaning "	169	106	...	6	..	27	8	22	9	3	51
Gore Bay "	58	43	2	1	1	12	1	14	8	1	43
Thessalon "	12	12	..	..	..	..	..	..	..	..	..
Sault Ste. Marie "	63	35	....	9	3	3	.....	11	11	.....	6
Port Arthur "	17	8	.....	.....	....	1	.....	3	.....	..	.....
Sturgeon Falls "	11	4	..	.....	...	.....	.....	.....	2	.....	10
Golden Lake "	6	6	.....	.....	.....	.....	.....	.....	2	.....	..
Tyendinaga "	134	107	46	75	33	81	46	66	52	1	53
Lake Simcoe "	12	12	2	2	1	3	3	3	3	.....	8
Cape Croker "	30	30	2	...	2	12	1	15	15	.....	2
Saugeen "	50	40	.....	6	1	12	1	12	7	.....	55
Alnwick "	28	25	8	11	4	6	4	8	9	.....	4
Mud Lake "	17	12	3	4	4	1	2	2	4	1	1
Rice Lake "	14	14	3	3	1	2	3	3	5	.....	1
Rama "	16	15	1	1	1	1	1	2	4	...	4
Christian Island "	75	50	6	6	8	3	1	6	4	1	6
Scugog "	7	2	...	1	.....	1	1	1	3	.....	2
Kenora "	10	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Frances "	26	25	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savanne "	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	1,527	1,227	230	572	188	498	262	467	474	18	384

QUEBEC.												
Lake of Two Mountains Agency	47	56	6	22	3	13	8	25	7	5	8
Caughnawaga Agency	400	202	17	50	10	150		150	20	14	25
St. Regis "	129	104	8	100	5	63	17	65	8	6	60
Viger "											
St. Francis "	5	3									3
Maria "	6	6		2				2		1	
Restigouche "	37	34		8	5	4	2	16	3	2	8
River Desert "	26	25	1		3	5	1	5	9	1	
Jeune Lorette "	4	5		1	1			1			
Becancour "	2	2		1		2		2			
Timiskaming "	10	10		1		2		2			3
Bersimis "	1										
*Mingan "											
Lake St. John "	22	30		1	3	4	1	7	9	10	1
Total	689	477	32	186	30	243	29	275	56	39	108

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS—*Continued.*

Agency.	Agricultural Implements, Vehicles, &c.							Value of Implements and Vehicles.
	Other Implements.	Wagons.	Carts.	Sleighs, Draught.	Sleighs, Driving.	Democrat Wagons.	Buggies and Road Carts.	
ONTARIO.								$ cts.
Grand River Superintendency—Six Nations	3,702	298	70	220	160	122	240	201,320 00
Parry Sound Superintendency	690	11	4	29	16	...	9	3,590 00
New Credit (Mississaguas) Agency	141	25	6	21	17	11	34	7,990 00
Walpole Island Agency	750	55	5	50	10	35	57	9,000 00
Sarnia "	720	48	..	39	13	13	55	9,757 00
Caradoc "	1,788	98	19	82	47	46	154	20,450 00
Moravian "	500	36	..	25	5	7	40	8,000 00
Manitowaning "	1,435	110	9	122	114	11	18	10,650 00
Gore Bay "	2,367	32	2	52	63	11	32	11,374 80
Thessalon "	713	1	...	7	34	...	...	1,096 00
Sault Ste. Marie "	1,380	22	6	62	15	4	6	5,675 00
Port Arthur "	203	8	...	9	...	...	1	1,555 00
Sturgeon Falls "	...	4	3	20	6	...	...	1,005 00
Golden Lake "	...	3	1	4	3	2	1	250 00
Tyendinaga "	1,218	100	12	83	68	58	125	33,142 50
Lake Simcoe "	112	6	1	7	6	2	3	1,150 00
Cape Croker "	300	25	1	25	15	16	16	6,330 00
Saugeen "	1,460	31	...	40	34	28	37	4,680 00
Alnwick "	518	17	3	15	19	12	14	4,202 50
Mud Lake "	160	9	1	10	6	4	5	1,900 00
Rice Lake "	76	6	1	5	4	...	6	1,850 00
Rama "	140	5	..	61	8	1	8	1,000 00
Christian Island "	175	25	2	30	6	4	6	3,800 00
Scugog "	40	2	...	2	...	2	2	400 00
Kenora "	2,601	...	...	1	...	...	...	942 75
Fort Frances "	600	3	...	10	6	...	...	1,535 00
Savanne "	2,076	...	...	...	...	...	...	604 00
Total	23,675	980	146	1,031	675	389	869	353,249 55

QUEBEC.										
Lake of Two Mountains Agency	377	17	48	51	33	12	48	10,871	80
Caughnawaga	556	150	190	204	60		87	17,770	00
St. Regis	320	75	29	62	24	8	80	10,300	00
Viger								476	00
St. Francis	280	7		5	5	2	3	1,175	00
Maria	125	5	7		7			5,000	00
Restigouche	200	12	10	36	6	3	13	5,244	00
River Desert	330	10	12	26	12	6	19	750	00
Jeune Lorette	157	4	5	9	6	1	4	800	00
Beauceour	60	2	2	4	2	2	3	1,305	00
Timiskaming	275	4	1	12	2	2		91	00
Bersimis			4	4			2		
*Mingan								4,497	00
Lake St. John		18	25	28	28	20	8		
Total	2,880	304	333	441	185	56	267	58,279	80

*No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS—*Continued.*

Agency.	Live Stock and Poultry.										
	Horses.			Cattle.					Other Stock.		
	Stallions.	Geldings and Mares.	Foals.	Bulls.	Oxen, work.	Steers.	Cows, Milch.	Young stock.	Lambs.	Sheep.	Boars.
Ontario.											
Grand River Superintendency—Six Nations	23	820	175	32	.....	160	701	812	101	120	40
Parry Sound Superintendency	10	67	2	7	2	20	61	81	.....	.....	4
New Credit (Mississaguas) Agency	1	77	6	4	.....	19	91	82	.....	1	.....
Walpole Island "	66	166	.....	12	6	23	170	150	.....	15	15
Sarnia "	1	81	11	2	.....	.....	59	66	.....	.....	.....
Caradoc "	1	307	9	8	.....	54	198	297	.....	10	6
Moravian "	.....	152	45	4	.....	35	65	105	.....	.....	3
Manitowaning "	5	136	10	4	.....	42	35	45	.....	30	12
Gore Bay "	43	65	19	2	2	23	59	33	.....	14	5
Thessalon "	.....	68	6	.....	.....	.....	36	25	.....	.....	5
Sault Ste. Marie "	1	103	4	7	34	76	87	66	.....	.....	5
Port Arthur "	.....	18	.....	1	.....	.....	17	13	.....	.....	.....
Sturgeon Falls "	18	29	7	6	.....	7	70	62	.....	.....	6
Golden Lake "	.....	2	1	1	.....	10	12	5	.....	.....	2
Tyendinaga "	6	280	25	25	.....	16	710	440	.....	.....	10
Lake Simcoe "	1	18	.....	1	.....	10	21	15	.....	4	.....
Cape Croker "	.....	80	10	1	.....	20	25	40	30	30	2
Saugeen "	.....	90	.....	.....	.....	.....	40	50	.....	.....	.....
Alnwick "	.....	31	5	2	.....	6	44	42	.....	.....	.....
Mud Lake "	2	28	8	2	.....	10	45	40	.....	.....	1
Rice Lake "	.....	25	7	1	.....	10	27	20	6	10	.....
Rama "	.....	7	.....	.....	.....	3	6	3	.....	.....	.....
Christian Island "	10	125	15	1	4	50	70	100	15	35	25
Scugog "	.....	6	.....	.....	.....	.....	3	.....	.....	.....	.....
Kenora "	.....	61	.....	4	19	12	18	26	.....	.....	.....

Fort Frances	"	27	52	1	3	10	5	22	13			
Savanne	"		14		8	2	1	14	11			
Total		215	2,908	366	138	79	612	2,706	2,642	152	269	141
QUEBEC.												
Lake of Two Mountains Agency		5	75	11	12			135	67		8	2
Caughnawaga	"	5	280	300	15		25	450	300	10	25	10
St. Regis	"	6	210	52	19		36	310	182			20
Viger	"											
St. Francis	"		7		1			25	10			
Maria	"		3	1	1	1	12	12	14	2	6	
Restigouche	"	4	32	8	4		11	42	90	11	12	7
River Desert	"	1	27	3	3		5	45	9	2	15	2
Jeune Lorette	"		5		1	1	1	16	2			
Becancour	"		4	1	1			19	6		4	
Timiskaming	"		15					11	9	2	3	
Bersimis	"	4						4	2			2
*Mingan	"											
Lake St. John	"	15	23	5	7	4	26	66	40		14	3
Total		40	681	381	64	6	116	1,135	731	27	87	46

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS—*Continued.*

Agency.	Live Stock and Poultry—*Continued.*							General Effects.		
	Other Stock—*Con.*		Poultry.				Value of Live Stock and Poultry.			
	Sows.	Other Pigs.	Turkeys.	Geese	Ducks.	Cocks and Hens.		Sail Boats.	Row Boats.	Canoes.
ONTARIO.							$ cts.			
Grand River Superintendency—Six Nations	601	1,602	660	192	760	15,060	199,884 00	.....	5	43
Parry Sound Superintendency	6	48	10	5	.....	800	6,620 00	13	33	43
New Credit (Mississaguas) Agency	7	27	31	15	17	414	11,625 00	.....	.....	1
Walpole Island Agency	50	125	120	70	130	1,300	14,500 00	.....	45	37
Sarnia "	33	37	208	3	166	1,560	9,370 00	.....	33	1
Caradoc "	48	299	130	41	80	4,421	29,150 00	.....	2	2
Moravian "	80	260	80	65	70	700	17,850 00	.....	6	.....
Manitowaning "	73	424	.....	6	.....	1,700	12,700 00	65	16	31
Gore Bay "	39	205	4	4	36	570	13,346 00	25	24	.....
Thessalon "	37	79	.....	.....	.....	744	7,265 00	46	34	64
Sault Ste. Marie "	40	96	56	180	90	760	12,100 00	29	32	33
Port Arthur "	.....	.....	.....	.....	.....	370	4,005 00	45	49	295
Sturgeon Falls "	7	.....	.....	.....	.....	.....	5,936 00	12	37	98
Golden Lake "	13	16	.....	.....	.....	.....	500 00	11	10	11
Tyendinaga "	100	211	160	120	230	3,660	64,544 00	.....	20	1
Lake Simcoe "	10	13	21	5	.....	272	2,947 74	5	18	3
Cape Croker "	25	150	25	10	20	200	12,090 00	10	20	2
Saugeen "	33	75	25	10	20	150	6,500 00	2	4	.....
Alnwick "	10	41	.....	.....	2	709	5,619 00	.....	1	25
Mud Lake "	5	35	50	30	42	350	5,500 00	.....	1	52
Rice Lake "	6	33	42	31	8	160	3,160 00	.....	.....	17
Rama "	3	20	20	25	60	140	1,100 00	.....	5	70
Christian Island "	80	250	40	70	.....	1,000	6,500 00	30	50	40
Scugog "	3	.....	.....	.....	.....	80	616 00	.....	2	11
Kenora "	.....	.....	.....	.....	.....	.....	3,215 00	.....	7	361

Frort Frances "							4,225 00		26	265
Savanne "							1,280 00	1	3	393
Total	1,309	4,046	1,682	882	1,731	35,120	462,147 74	294	483	1,899
QUEBEC.										
Lake of Two Mountains Agency	37	16			2	450	10,683 00	4	22	8
Caughnawaga "	75	143	25	25	25	500	25,238 75		37	
St. Regis "	75	134	210	70	100	850	29,800 00		68	
Viger "										9
St. Francis "	1	16				101	1,483 00		8	9
Maria "	1	6				90	1,270 00			8
Restigouche "	10	48				100	7,500 00		4	40
River Desert "	11	23	12			260	3,516 00		3	45
Jeune Lorette "		10	2			250	455 00			6
Becancour "	5					30	1,100 00		1	1
Timiskaming "		3				9	2,449 60		1	17
Bersimis "						12	395 00	1		104
*Mingan "										
Lake St. John "	30	35				200	6,088 00			150
Total	245	434	249	95	127	2,932	89,978 35	5	144	397

*No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS—*Concluded.*

Agency.	General Effects.						Household Effects.	Value of Real and Personal Property.
	Rifles.	Shot Guns.	Nets.	Steel Traps.	Tents.	Value of	Value of	
ONTARIO.						$ cts.	$ cts.	$ cts.
Grand River Superintendency—Six Nations	40	140	....	285	4	1,100 00	37,810 00	1,857,524 00
Parry Sound Superintendency	77	86	22	700	25	3,845 00	8,625 00	247,805 00
New Credit (Mississaguas) Agency	6	14	....	208	3	254 50	7,250 00	296,614 50
Walpole Island Agency	15	60	....	1,150	6	1,700 00	14,000 00	394,200 00
Sarnia "	20	43	10	93	1	900 00	13,550 00	483,901 00
Caradoc "	39	46	12	555	6	455 00	50,170 00	596,986 00
Moravian "	20	13	16	50	...	295 00	32,900 00	186,045 00
Monitowaning "	37	116	312	622	70	7,095 00	26,950 00	266,645 00
Gore Bay "	16	59	136	267	4	2,194 00	15,183 00	140,712 80
Thessalon "	9	101	254	785	72	5,957 00	7,533 00	122,193 50
Sault Ste. Marie "	57	116	116	446	71	5,380 00	11,300 00	118,855 00
Port Arthur "	135	236	1,125	710	225	16,150 00	6,205 00	166,618 00
Sturgeon Falls "	56	94	172	1,030	100	6,066 00	11,700 00	256,697 00
Golden Lake "	12	10	12	275	9	725 00	500 00	10,329 00
Tyendinaga "	23	66	6	530	2	1,419 00	64,700 00	892,705 50
Lake Simcoe "	9	9	8	122	15	840 00	2,800 00	50,328 54
Cape Croker "	20	25	100	20	5	2,540 00	24,000 00	220,674 00
Saugeen "	40	81	23	110	20	1,050 00	5,300 00	121,030 00
Alnwick "	14	25	.....	1,149	21	1,362 78	7,940 00	147,596 28
Mud Lake "	10	27	.....	2,100	16	1,500 00	10,000 00	71,700 00
Rice Lake "	6	11	.....	850	.....	1,200 00	5,100 00	46,120 00
Rama "	20	16	.....	370	22	855 00	4,000 00	81,455 00
Christian Island "	60	30	60	500	40	1,700 00	6,000 00	280,000 00
Scugog "	2	7	1	400	6	330 00	1,428 00	58,522 00
Kenora "	69	238	334	5,979	184	12,795 15	14,808 25	168,903 90
Fort Frances "	52	138	337	2,880	62	6,020 00	6,060 00	253,095 00
Savanne "	78	257	444	4,653	235	13,826 30	16,673 00	137,687 05
Total	942	2,064	3,500	26,839	1,224	97,554 73	412,485 25	17,674,943 07

QUEBEC.								
Lake of Two Mountains Agency	7	28	4	204	5	632 00	3,717 00	101,569 80
Caughnawaga Agency	50	25	3	75	5	1,406 50	54,000 00	552,786 25
St. Regis "	18	25	21	510	.....	510 00	13,000 00	313,410 00
Viger "	.....	22	.....	331	.....	495 00	1,195 00	3,715 00
St. Francis "	9	24	.....	473	18	849 50	13,970 00	149,653 50
Maria "	2	15	.....	120	2	600 00	2,000 00	24,015 00
Restigouche "	24	6	.....	92	3	1,500 00	15,700 00	76,900 00
River Desert "	33	96	15	800	35	3,127 00	4,035 00	155,317 00
Jeune Lorette "	7	32	.....	250	6	300 00	9,500 00	78,155 00
Becancour "	6	2	.....	35	1	100 00	150 00	5,425 00
Timiskaming "	21	9	31	301	16	1,043 00	3,735 00	35,561 85
Bersimis "	23	140	29	1,289	76	4,495 00	5,312 00	39,843 00
*Mingan "	.....	.....	.....	.....	.....	.....	.....	.....
Lake St. John "	175	240	150	7,200	200	21,070 00	8,000 00	90,373 00
Total	375	664	253	11,689	367	36,128 00	134,314 00	1,626,724 40

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

AGRICULTURE, SEASON 1907.

Agency.	Grain, Roots and Fodder.									
	Wheat.		Oats.		Barley.		Corn.		Pease.	
	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.
ONTARIO.										
Grand River Superintendency—Six Nations	1,250	17,120	2,412	97,321	350	7,591	360	8,901	640	7,490
Parry Sound Superintendency	.....	.....	30	400	.....	.....	29	375	7	120
New Credit (Mississaguas) Agency	134	1,980	405	11,206	67	1,250	6	455	38	654
Walpole Island Agency	85	1,600	160	4,100	7	150	150	6,300	5	45
Sarnia "	165	1,380	225	6,015	51	1,025	59	2,450	17	330
Caradoc "	211	3,578	839	22,266	77	1,832	304	18,700	3	55
Moravian "	70	700	300	7,500	30	900	165	5,000	4	80
Manitowaning "	37	524	371	3,954	23	214	56	1,878	335	3,765
Gore Bay "	1¼	50	74¼	1,710	5½	92	20¾	1,780	86½	2,015
Thessalon "	.....	.....	43	896	.....	.....	30	709	23	435
Sault Ste. Marie "	.....	.....	105	1,100	5	75	5	135	14	280
Port Arthur "	.....	.....	8	245	.....	.....	.....	.....	.....	.....
Sturgeon Falls "	.....	.....	20	340	.....	.....	7	250	5	200
Golden Lake "	2	20	10	200	.....	.....	2	45	6	70
Tyendinaga "	135	1,700	1,440	32,000	350	5,500	160	3,230	120	2,200
Lake Simcoe "	25	250	80	1,200	15	188	2¼	24	.....	.....
Cape Croker "	75	1,125	150	3,750	.....	.....	10	400	100	2,500
Saugeen "	20	350	200	1,200	.....	.....	20	700	47	475
Alnwick "	40	453	160	3,375	4	120	.....	.....	71	1,690
Mud Lake "	35	500	130	2,860	.....	.....	4	68	30	365
Rice Lake "	100	2,140	50	1,000	20	360	7	96	80	1,520
Rama "	8	160	270	8,000	5	75	10	200	30	800
Christian Island "	40	500	200	3,000	.....	.....	80	1,000	60	800
Scugog "	9	105	40	450	.....	.....	.....	.....	.....	.....
Kenora "	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Fort Frances "										
Savanne "										
Total...	2,442¼	34,235	7,722¾	214,088	1,009½	19,372	1,487	52,696	1,721¼	25,889
QUEBEC.										
Lake of Two Mountains Agency	19	160	267	3,060	10	120	75	500		
Caughnawaga Agency			775	20,170	50	300	200	3,000	15	300
St. Regis "	135	1,975	500	10,000	28	545	300	7,600	60	865
Viger "										
St. Francis "	1	12	60	801			4	65		
Maria "	1	8	20	300						
Restigouche "			187	4,400						
River Desert "	4	40	80	1,300			2½	100	10	200
Jeune Lorette "										
Becancour "			15	200			2	30	2	15
Timiskaming "			8	170						
Bersimis "										
*Mingan "										
Lake St. John "	60	500	350	4,600	34	260			42	390
Total...	220	2,695	2,262	45,001	122	1,225	583½	11,895	129	1,770

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

AGRICULTURE, SEASON 1907.

Agency.	Grain, Roots and Fodder—*Continued.*									
	Rye.		Buckwheat.		Beans.		Potatoes.		Carrots.	
	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.
ONTARIO.										
Grand River Superintendency—Six Nations	110	1,600	35	410	35	440	203	9,781	8	702
Parry Sound Superintendency	.....	.....	.....	.....	10	190	26	2,969	1	25
New Credit (Mississaguas) Agency	9	160	.....	.....	.....	5	7½	992	½	66
Walpole Island Agency	.....	.....	3	525	25	410	95	3,600	.....	150
Sarnia "	.....	.....	.....	.....	15	252	26	2,072	.....	93
Caradoc "	.....	.....	22	261	30½	898	101	10,397	7½	747
Moravian "	15	300	35	420	45	675	32	1,920	.....	.....
Manitowaning "	.....	.....	.....	.....	5½	242	360	23,776	2½	128
Gore Bay "	½	20	.....	.....	4½	351	79¼	8,395	1½	217
Thessalon "	.....	.....	.....	.....	.....	.....	94	7,385	1	200
Sault Ste. Marie "	.....	.....	2	20	½	10	157	3,760	3	90
Port Arthur "	.....	.....	.....	.....	.....	.....	58	11,200	.....	.....
Sturgeon Falls "	.....	.....	.....	.....	2	40	10	1,450	1	40
Golden Lake "	.....	.....	.....	.....	.....	.....	4	150	.....	.....
Tyendinaga "	35	270	25	460	30	330	265	5,200	5	285
Lake Simcoe "	.....	.....	6	37	1	15	4	250	½	20
Cape Croker "	.....	.....	.....	.....	.....	.....	40	3,000	2	200
Saugeen "	.....	.....	.....	.....	3	75	20	1,000	.....	.....
Alnwick "	.....	.....	16	250	.....	.....	23½	2,480	.....	.....
Mud Lake "	.....	.....	.....	.....	3	45	70	4,270	3	355
Rice Lake "	.....	.....	8	128	2	27	32	2,100	3	408
Rama "	.....	.....	.....	.....	6	80	45	2,000	1	60
Christian Island "	.....	.....	.....	.....	5	70	120	4,000	.....	.....
Scugog "	4	60	10	60	½	8	3	234	.....	.....
Kenora "	.....	.....	.....	.....	.....	.....	21	2,809	.....	.....
Fort Frances "	.....	.....	.....	.....	.....	.....	17½	3,080	.....	.....

Savanne	"							37	5,016		
Total		173½	2,410	162	2,571	223¼	4,163	1,951	123,286	40	3,786
QUEBEC.											
Lake of Two Mountains Agency				33	300	15	200	45	3,650		
Caughnawaga Agency				100	3,000	7	200	125	2,800		
St. Regis	"	8	160	39	800	12	350	375	10,150	10	365
Viger	"										
St Francis	"			7	129	1¾	26¼	15	853	½	4
Maria	"							4	350		
Restigouche	"			10	430			50	4,200		
River Desert	"			14	400	2	60	25	2,500	1	80
Jeune Lorette	"					½	6			¼	10
Becancour	"			1	12	½	2	2	75	1	5
Timiskaming	"							10	1,519		
Bersimis	"							10	400		
Mingan	"	*									
Lake St. John	"			60	1,100	2	30	300	6,000	½	30
Total		8	160	264	6,171	40¾	874¼	961	32,497	13¼	494

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

AGRICULTURE, SEASON 1907—*Concluded.*

Agency.	Grain, Roots and Fodder—*Continued.*							New Land Improvements.			
	Turnips.		Other Roots.		Hay.		Other Fodder.	Land Cleared.	Land Broken.	Land Cropped for first time.	Land Fenced.
	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Cultivated.	Wild.					
ONTARIO.					Tons.	Tons.	Tons.	Acres.	Acres.	Acres.	Acres.
Grand River Superintendency—Six Nations	7	801	18	1,768	6,985	.....	3,241	.....	.....	.....	.....
Parry Sound Superintendency	3	405	.....	300	179½	135	.....	49	.....	.....	.....
New Credit (Mississaguas) Agency	.....	.....	¼	95 tons	430	.....	460	3	11½	5	50
Walpole Island Agency	.....	350	.....	75	210	950	450	.....	2	.....	.....
Sarnia "	.....	180	.....	130	339	.....	.....	10	.....	.....	.....
Caradoc "	2	186	19	1,907	1,151	24	810	10	.....	.....	.....
Moravian "	.....	.....	6	1,500	500	.....	600	.....	.....	.....	.....
Manitowaning "	11	1,300	1	139	1,108	141	214	26	18	20	.....
Gore Bay "	5¾	690	6½	574	337	10	176	46	7	7	7
Thessalon "	1	156	.....	.....	49	69	14	63	3	13	13
Sault Ste. Marie "	7	500	1	40	170	280	.....	.....	.....	.....	4
Port Arthur "	.....	.....	.....	.....	23	32	.....	4	.....	.....	.....
Sturgeon Falls "	5	300	2	60	56	140	.....	8	.....	.....	.....
Golden Lake "	.....	.....	.....	.....	4	12	6	.....	.....	.....	.....
Tyendinaga "	2	180	27	460	2,000	500	700	.....	.....	.....	.....
Lake Simcoe "	¾	100	1	120	51	15	1	2	2	2	2
Cape Croker "	2	400	.....	.....	200	20	50	.....	.....	.....	.....
Saugeen "	6	500	3	50	100	4	75	.....	10	10	.....
Alnwick "	5½	2,100	.....	208	89½	.....	91	.....	.....	.....	.....
Mud Lake "	8	1,650	5	480	80	.....	.....	3	.....	5	5
Rice Lake "	6	1,120	4	460	70	.....	24	.....	.....	3	12
Rama "	3	450	1	75	400	10	12	1	1	1	1
Christian Island "	15	800	.....	.....	200	80	.....	100	.....	100	100
Scugog "	.....	.....	.....	.....	22	.....	.....	.....	.....	.....	.....
Kenora "	7½	495	9	417	.....	346	.....	.....	18	.....	.....
Fort Frances "	.....	.....	5	432	.....	73	195	.....	.....	.....	.....

Savanne Agency	4¾	260	5½	195		203					
Total	102¼	12,923	114½	9,485	14,754	3,044	7,117	325	72½	166	194
QUEBEC.											
Lake of Two Mountains Agency					120	12	130	10			
Caughnawaga Agency					3,000	250					
St. Regis "	8	800	10	1,100	1,350	440	750	15	15	15	100
Viger "											
St. Francis "	3	41	2	92	39	2		79	19	4	
Maria "					30						
Restigouche "	1	55			250		350	2	2	2	2
River Desert "	8	2,400	5	500	125	15	100	13		7	10
Jeune Lorette "			1	50							
Becancour "					30						
Timiskaming "	1	203			28	27	13	15	2	8	2
Bersimis "					10	15					
Mingan "				No	return	received					
Lake St. John "	4	75			140		80	1	2		
Total	25	3,574	18	1,742	5,122	761	1,423	135	40	36	114

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PROGRESS DURING THE YEAR 1907.

Agency.	Buildings Erected.										
	Dwellings.				Shanties.	Barns.	Horse Stables.	Driving Sheds.	Cattle Stables.	Pig Sties.	Storehouses.
	Stone.	Brick.	Frame.	Log.							
Ontario.											
Grand River Superintendency—Six Nations		1	4	4		10	5	3	2	1	
Parry Sound Superintendency				2			1				
New Credit (Mississaguas) Agency			2	1		2	1				
Walpole Island Agency			2								
Sarnia "			3								
Caradoc "	1				1		16			3	
Moravian "				2						2	
Manitowaning "				2		1			2		
Gore Bay "			1	1	2		6			4	
Thessalon "				2							
Sault Ste Marie "			2	1	1						
Port Arthur "			2								
Sturgeon Falls "			1	2							
Golden Lake "											
Tyendinaga "				1						1	
Lake Simcoe "											
Cape Croker "			1		3						
Saugeen "			2	2		2					
Alnwick "											
Mud Lake "											
Rice Lake "											
Rama "											
Christian Island "											
Scugog "											
Kenora "											
Fort Frances "			1	17			3				
Savanne "				8			2		2		
Total	1	1	20	45	7	15	34	3	6	11	

QUEBEC.													
Lake of Two Mountains Agency			5			1							
Caughnawaga Agency			10			1	2						3
St. Regis "			4			2	3			4	4		
Viger "													
St. Francis "													2
Maria "													
Restigouche "													
River Desert "					1								
Jeune Lorette "			1										
Becancour "													
Timiskaming "			2		1	1							
Bersimis "													
*Mingan "													
Lake St John "			1	1							2		
Total			23	1	2	5	5			4	6	5	

*No return received

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PROGRESS DURING THE YEAR 1907.

Agency.	Buildings Erected.			Increase in Value.		
	Root Houses.	Milk Houses.	Corn Cribs.	Value of New Land Improvements	Value of Buildings Erected.	Total Value of New Land Improvements and Buildings.
Ontario.				$ cts.	$ cts.	$ cts.
Grand River Superintendency—Six Nations			2		11,425 00	11,425 00
Parry Sound Superintendency				490 00	450 00	940 00
New Credit (Mississaguas) Agency				40 00	1,150 00	1,190 00
Walpole Island "				40 00	600 00	640 00
Sarnia "				100 00	300 00	400 00
Caradoc "	4			525 00	1,700 00	2,225 00
Moraivian "			2		450 00	450 00
Manitowaning "				270 00	335 00	605 00
Gore Bay "				440 00	440 00	880 00
Thessalon "				760 00	300 00	1,060 00
Sault Ste Marie "					530 00	530 00
Port Arthur "				80 00	700 00	780 00
Sturgeon Falls "				150 00	1,000 00	1,150 00
Goden Lake "						
Tyendinaga "		1			1,000 00	1,000 00
Lake Simcoe "				20 00		20 00
Cape Croker "					6 0 00	650 00
Saugeen "				100 00	500 00	600 00
Alnwick "						
Mud Lake "				32 00		32 00
Rice Lake "				18 00		18 00
Rama "				75 00		75 00
Christian Island "				1,000 00		1,000 00
Scugog "						
Kenora "				54 00	1,130 00	1,184 00
Fort Frances "						
Savanne "					440 00	440 00
Total	4	1	4	4,194 00	23,100 00	27,294 00

QUEBEC.									
Lake of Two Mountains Agency						50 00	2,550 00		2,600 00
Caughnawaga	"						4,025 00		4,025 00
St. Regis	"					300 00	3,250 00		3,550 00
Viger	"								
St. Francis	"					1,230 00	420 00		1,650 00
Maria	"								
Restigouche	"					100 00			100 00
River Desert	"					330 00	25 00		355 00
Jeune Lorette	"						500 00		500 00
Becancour	"					245 00	850 00		1,095 00
Timiskaming	"								
Bersimis	"								
*Mingan	"								
Lake St. John	"					24 00	314 00		338 00
Total						2,279 00	11,934 00		14,213 00

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

SOURCES AND VALUE OF INCOME.

Agency.	Value of Farm Products including Hay.	Value of Beef Sold, also of that used for Food.	Wages Earned.	Received from Land Rentals.	The Estimated Value of Fish and Meat used for Food is included in these Columns.		Earned by other Industries.	Total Income of Indians.
					Earned by Fishing.	Earned by Hunting and Trapping.		
ONTARIO.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Grand River Superintendency—Six Nations	153,101 65		120,168 00	3,910 62				277,179 27
Parry Sound Superintendency	6,862 60	475 00	3,700 00		600 00	650 00	2,750 00	15,037 00
New Credit (Mississaguas) Agency	18,984 60	1,050 00	10,555 00	2,633 50	25 00	91 00	2,800 00	36,139 10
Walpole Island Agency	11,500 00	3,300 00	28,500 00		1,550 00	1,600 00	11,500 00	57,950 00
Sarnia "	10,168 00	100 00	14,865 00	2,000 00	2,028 00	95 00	2,010 00	31,266 00
Caradoc "	43,500 00	2,680 00	65,556 00	4,115 60	195 00	3 0 00	4,385 00	120,761 60
Moravian "	10,833 00	925 00	3,800 00	103 25	270 00	320 00	1,925 00	18,176 25
Manitowaning "	43,826 00	580 00	5,700 00	5,325 00	2,915 00	4,225 00	2,550 00	65,121 00
Gore Bay "	18,007 95	3,769 00	24,815 00	10 00	483 00	330 00	23,767 00	71,181 95
Thessalon "	7,321 00	165 00	33,040 00		1,654 00	667 00	1,854 00	44,701 00
Sault Ste. Marie "	5,900 00		18,500 00	2,500 00	2,330 00	2,650 00	7,100 00	38,980 00
Fort Arthur "	6,700 00		18,200 00		9,000 00	28,300 00	350 00	62,550 00
Sturgeon Falls "	1,750 00		11,300 00			3,000 00	3,700 00	19,750 00
Golden Lake "	300 00	150 00	4,000 00		100 00	450 00	500 00	5,500 00
Tyendinaga "	69,078 00	10,000 00	56,000 00	4,990 00	300 00	300 00	1,750 00	142,418 00
Lake Simcoe "	2,055 20	190 00	1,700 00	211 00	764 00	195 00	1,990 00	7,105 20
Cape Croker "	12,460 00	2,000 00	4,000 00		3,000 00	100 00	10,000 00	31,560 00
Saugeen "	4,000 00	500 00	18,000 00	8,000 00	500 00	100 00	10,000 00	41,100 00
Alnwick "	8,439 75	175 00	6,679 00	1,828 00	229 00	711 00	2,606 00	20,667 75
Mud Lake "	4,600 00	400 00	2,500 00	50 00	700 00	1,900 00	625 00	10,775 00
Rice Lake "	5,500 00	450 00	600 00	128 00	150 00	175 00	300 00	7,303 00
Rama "	5,400 00	200 00	3,000 00		400 00	400 00	3,000 00	12,400 00
Christian Island "	10,000 00	1,000 00	7,000 00		3,000 00	1,000 00	7,000 00	29,000 00
Scugog "	819 05	575 00	435 00	138 25	70 00	559 00	855 00	3,451 30
Kenora "	2,735 60	5,209 75	20,843 80		11,332 60	22,914 60	10,664 95	73,701 30
Fort Frances "	3,425 00	295 00	24,900 00	250 00	25,100 00	17,200 00	5,900 00	77,070 00
Savanne "	2,932 15	14,728 50	18,843 25		12,202 65	25,476 30	5,559 05	79,741 70
Total	470,198 95	48,917 05	527,200 05	36,193 22	78,898 25	113,738 90	125,440 00	1,400,586 42

QUEBEC.								
Lake of Two Mountains Agency	5,375 00	1,390 00	11,525 00	1,269 00	100 00	425 00	3,125 00	23,209 00
Caughnawaga "	47,146 00	... .	233,044 87	3,470 00	.....	.....	10,000 00	293,660 87
St. Regis "	84,000 00	42,000 00	146,000 00	209 36	1,200 00	1,000 00	14,000 00	288,409 36
Viger "	.....	.....	2,815 00	249 75	48 00	1,440 00	2,735 00	7,287 75
St. Francis "	1,310 50	....	4,713 00	.....	.....	450 00	14,950 00	21,423 50
Maria "	550 00	150 00	3,000 00	.....	360 00	680 00	1,575 00	6,315 00
Restigouche "	10,500 00	950 00	24,000 00	.....	300 00	100 00	9,000 00	44,850 00
River Desert "	5,391 00	1,000 00	20,800 00	238 00	75 00	7,000 00	7,200 00	41,704 00
Jeune Lorette "	.....	....	15,000 00	.....	10 00	1,300 00	26,000 00	42,310 00
Becancour "	530 00	.....	2,050 00	.....	....	....	510 00	3,090 00
Timiskaming "	1,913 50	130 00	12,850 00	.....	188 50	1,130 00	68 00	16,280 00
Bersimis "	375 00	....	1,600 00	.....	280 00	32,000 00	550 00	34,805 00
*Mingan "	.....	.....	.....	.....	.....	.....	.....	.....
Lake St. John "	7,000 00	400 00	5,000 00	.....	300 00	36,000 00	1,000 00	49,700 00
Total....	164,091 00	46,020 00	482,397 87	5,436 11	2,861 50	81,525 00	90,713 00	873,044 48

* No return received.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

REALTY OF INDIANS.

Agency.	Lands and Sources from which Indians Derive their Support.						Public Buildings, Property of the Band.											
	Cleared but not under Cultivation.	Under actual Cultivation.	Number engaged in farming.	Number engaged in Hunting, Trapping and fishing.	Number engaged in other Industries.	Number engaged in Stock-raising.	Saw Mills.	Grist Mills.	Threshers.	Engines.	Other Machinery.	Churches.	Council Houses.	School Houses.	Driving Sheds.	Other Buildings.	Ferries.	Value of Public Properties, &c.
New Brunswick.	Acres.	Acres.																$ cts.
Richibucto Superintendency	1,370	980	173	142	253	....	....	....	....	....	....	5	2	2	....	4	....	7,750 00
Fredericton "	324	339	54	38	90	2	....	....	..	....	..	1	2	3	....	4	1	7,300 00
Total	1,694	1,319	227	180	343	2	....	....	.	....	..	6	4	5	....	8	1	15,050 00
Prince Edward Island.																		
Prince Edward Island Superintendency	218	386	31	28	....	....	....	....	1	....	....	1	..	1	....	3	....	5,800 00
Nova Scotia.																		
Annapolis County	222	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Shelburne "	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Digby "	200	48	....	....	....	....	....	....	....	....	....	1	....	1	1	....	....	800 00
Yarmouth "	6¼	½	....	28	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kings "	57	3	1	30	30	1	....	....	....	....	....	....	....	....	....	....	....	....
Queens "	200	200	....	30	15	....	....	....	....	....	....	....	....	....	....	....	....	....
Halifax "	36	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Hants "	300	98	9	30	11	3	....	....	....	....	....	1	....	..	....	1	....	2,000 00
Colchester "	20	15	....	30	10	....	....	....	....	....	....	..	....	1	....	1	....	280 00
Cumberland "	225	25	12	25	20	....	....	....	....	....	....	1	....	....	....	....	....	150 00
Pictou "	65	50	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	4,500 00
Antigonish and Guysborough Counties	200	185	20	....	....	....	....	....	....	....	....	1	....	....	....	....	....	3,575 00
Richmond County	150	180	10	12	20	2	....	....	....	....	....	1	1	1	....	....	1	16,500 00
Inverness "	600	480	22	36	25	18	....	....	....	....	....	.	....	1	1	....	....	1,000 00
Victoria "	200	60	16	5	15	....	....	....	....	....	....	....	....	1	....	1	....	850 00
Cape Breton (Sydney) County	18¾	....	....	....	41	....	....	....	....	....	....	....	....	1	....	1	....	2,400 00

Lunenburg County	300	450	28	5	13								1				300	00
Cape Breton (Eskasoni) County	300	600	20	38	38	20					1		1				4,050	50
Total	3,100	2,394½	138	269	238	44					7	1	9	2	4	1	36,405	50
BRITISH COLUMBIA.																		
Cowichan Agency	5,400	3,202	25	106	327						4		7				10,245	00
West Coast "	314	54		706														
Kwawkewlth "	316	10¾		730	240								4				2,250	00
Lower Fraser "	3,498	3,713	509	638	587	391					43	5	2				56,700	00
Williams Lake Agency	59,550½	1,852	665	329	229	134			1		22						36,150	00
Kamloops-Okanagan Agency	241,643	17,046	893	537	53	816					32	3					26,630	00
Kootenay Agency	38,421	1,575	130	152	65	113					5		1				25,000	00
Northwest Coast Agency	504½	196		1,100	252		1				15	5	12		15		53,550	00
Babine and Upper Skeena River Agency	20,497	612		1,755	340	49	1								2		6,200	00
Cassiar Agency	325			80														
Total	370,469	28,260¾	2,222	6,133	2,093	1,503	2		1		121	13	26		17		216,725	00
MANITOBA.																		
Clandeboye Agency	12,540	463	223	236	100						6	1	9			2	38,000	00
Portage la Prairie Agency	21,764	1,094	32	123	95	23					1	1	3	1	7		2,550	00
Manitowapah "	35,930	322									8		11		10			
Norway House "	13,643	2,390									11		13				27,925	00
The Pas "	6,919	36		635	43	14	1						4		5		3,000	00
Birtle "	31,333	18,197	44	59	27	75					3		1	3	1		1,840	00
Oak River (Sioux) "	8,869	3,155	69	58	38	25					1		1	2			2,870	00
Total	130,998	25,657	368	1,111	303	137	1				30	2	42	6	23	2	76,185	00

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

REALTY OF INDIANS.

Agency.	Private Fencing and Buildings.												Value of Private Fencing.	Value of Private Buildings.	Total Value of Private Fencing and Buildings.
	Acres Fenced.	Dwellings, Frame.	Dwellings, Log.	Shanties.	Barns.	Horse Stables.	Driving Sheds.	Cattle Stables.	Pig Sties.	Storehouses.	Root Houses.	Milk Houses.			
New Brunswick.													$ cts.	$ cts.	$ cts.
Richibucto Superintendency	930	183		35	50	59		52	20		49	1	2,075 00	20,425 00	22,500 00
Fredericton "	514	120	38	18	21	32	2	17	45	4	10	9	2,075 00	22,650 00	24,725 00
Total	1,444	303	38	53	71	91	2	69	65	4	59	10	4,150 00	43,075 00	47,225 00
Prince Edward Island.															
Prince Edward Island Superintendency	285	50			25	22		22	12	4	41	6	1,650 00	6,750 00	8,400 00
Nova Scotia.															
Annapolis County	35	14		4	3			3	1				65 00	1,000 00	1,065 00
Shelburne "	10	8	1	2	3				1		1		475 00	1,350 00	1,825 00
Digby "		27	5	5	2									1,450 00	1,450 00
Yarmouth "															
Kings "	20	11		3	1	1		1					400 00	1,000 00	1,400 00
Queens "	200	16		2	2				3				80 00	1,800 00	1,880 00
Halifax "			23	28										1,200 00	1,200 00
Hants "	80	15	1	2	7	1		7	3				800 00	6,000 00	6,800 00
Colchester "	15	21		1	3								15 00	1,050 00	1,065 00
Cumberland "	12	22		7	4	4		3	3				20 00	800 00	820 00
Pictou "	50	30		6	11	4							50 00	2,000 00	2,050 00
Antigonish and Guysborough Counties	200	44		8	15								75 00	3,700 00	3,775 00
Richmond County	170	18		7	8	8		8	1			1	100 00	1,700 00	1,800 00
Inverness "	655	26	1	12	16			1					660 00	3,858 00	4,518 00
Victoria "	180	17		3	9								500 00	3,400 00	3,900 00
Cape Breton (Sydney) County	2$\frac{3}{4}$	15		12	1	1	1						25 00	1,200 00	1,225 00
Lunenburg County	500	16		1	10				6				200 00	4,210 00	4,410 00

Cape Breton (Eskasoni) County	600	19	2	4	21	11		12				3	6,000 00	32,220 00	38,220 00
Total	2,729¾	319	33	107	116	30	1	35	18		1	4	9,465 00	67,938 00	77,403 00
British Columbia.															
Cowichan Agency	5,439	577	10	22	213	5		71					105,350 00	84,500 00	189,850 00
West Coast "	53	418		278	1	2							1,650 00	97,100 00	98,750 00
Kwawkewlth "	19	87	1	171					1	1			190 00	28,815 00	29,005 00
Lower Fraser "	4,823	762	62	301	290	274	1	269	92	8	51	1	15,007 00	150,596 00	165,603 00
Williams Lake Agency	25,376	6	485			187			33		20		6,850 00	92,800 00	99,650 00
Kamloops-Okanagan Agency	95,695	147	836	13	24	599	2	105	81	91	298	4	191,390 00	257,400 00	448,790 00
Kootenay Agency	1,575	33	139	86	27	21		21			22		9,390 00	12,385 00	21,775 00
Northwest Coast Agency	50	793	71	5	22	2	5	2		29	165		1,000 00	235,200 00	236,200 00
Babine and Upper Skeena River Agency	917	342	493	228		63		59		15	117		11,790 00	111,900 00	123,690 00
Cassiar Agency			27											10,250 00	10,250 00
Total	23,947	3,165	2,124	1,104	577	1,153	8	527	207	144	673	5	342,617 00	1,080,946 00	1,423,513 00
Manitoba.															
Clandeboye Agency	2,846	3	356			27		195		66	10	8	3,470 00	87,400 00	90,870 00
Portage la Prairie Agency	3,525		58	31		45		35		17	14	3	3,450 00	4,800 00	8,250 00
Manitowapah "	293		308	46		160		241	1	111	15	36	515 00	18,650 00	19,165 00
Norway House "	351		423					143		24			1,253 00	39,850 00	41,083 00
The Pas "	101		113	53		20		52		1			1,034 00	23,250 00	24,284 00
Birtle "	9,705	11	62	41		84	1	80	4	51	1	5	1,130 00	16,270 00	17,400 00
Oak River Sioux "	1,205	28	37	26		49	15	29	2	39	23		860 00	13,200 00	14,060 00
Total	18,026	42	1,357	157		385	16	775	7	309	63	52	11,692 00	203,420 00	215,112 00

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS.

Agency.	Agricultural Implements, Vehicles, &c.																	Value of Implements and Vehicles.
	Ploughs.	Harrows.	Seed Drills	Cultivators.	Land Rollers.	Mowers.	Reapers and Binders.	Horse Rakes.	Fanning Mills.	Threshing Machines.	Tool Chest.	Other Implement.	Wagons.	Carts.	Sleighs, Draught.	Sleighs, Driving.	Democrate Wagons.	Buggies and Road Carts.	
New Brunswick.																			
Richibuco Superintendency	25	22	...	7	3	....	....	5	....	....	19	1,450	15	.....	67	17	29	19	4,075 00
Fredericton "	31	35	....	18	7	1	....	9	5	....	....	195	24	....	26	28	2	12	3,652 50
Total	56	57	....	25	10	1	....	14	5	....	19	1,645	39	....	93	45	31	31	7,727 50
Prince Edward Island.																			
Prince Edward Island Superintendency	9	9	....	4	3	....	2	2	2	1	4	104	4	6	9	2	.....	....	840 00
Nova Scotia.																			
Annapolis County	2	2	....	....	....	1	....	..	....	....	....	.....	1	.....	1	....	.....	.....	75 00
Shelburne "	....	....	....	....	....	....	....	....	....	....	....	20	1	....	....	....	.....	.....	35 00
Digby "	....	....	....	....	....	....	....	....	....	....	....	50	.....	.....	.....	.....	.....	....	20 00
Yarmouth "	....	....	....	....	....	....	....	....	....	....	....	.....	....	.....	.....	.....	.....	.....	.....
Kings "	1	1	....	....	....	....	....	....	....	....	....	30	1	.....	1	.....	.....	.....	100 00
Queens "	....	2	....	....	....	....	....	....	....	....	....	10	4	2	1	1	.....	....	175 00
Halifax "	2	..	....	....	....	....	....	....	....	....	....	20	.. ..	2	2	1	..	.....	330 00
Hants "	3	4	....	4	..	2	....	3	....	....	15	50	2	.....	6	7	1	3	1,900 00
Colchester "	....	....	....	....	....	....	....	....	....	....	....	10	1	.....	1	.....	.....	1	53 00
Cumberland "	....	....	....	....	....	....	....	....	....	....	....	45	1	.....	....	1	....	1	150 00
Pictou "	3	2	....	1	1	....	....	....	....	1	3	3	9	2	8	....	....	....	465 00
Antigonish and Guysborough Counties	....	....	....	....	....	....	....	....	....	....	4	.....	2	3	4	2	...	.....	150 00
Richmond County	3	2	....	....	....	....	....	....	....	....	3	200	5	4	5	3	.....	.....	450 00
Inverness "	10	5	....	3	....	3	....	1	....	....	....	140	4	4	6	5	.....	....	4,030 00
Victoria "	5	3	....	....	....	....	....	1	....	....	....	150	3	3	7	3	1	3	900 00
Cape Breton (Sydney) County	....	....	....	....	....	....	....	....	....	....	....	.....	1	1	1	1	..	..	100 00
Lunenburg "	5	4	....	....	1	..	....	1	....	....	....	17	5	3	1	2	..	.....	300 00

Cape Breton (Eskasoni) "	6	2	....	....	....	3	....	....	....	....	....	.....	8	9	11	2	...	....	1,114 00
Total	42	27	....	8	2	9	....	6	..	1	25	745	48	33	56	28	2	8	10,347 00
British Columbia.																			
Cowichan Agency	158	104	....	3	3	45	17	29	7	16	9	4,064	181	2	13	8	27	160	35,115 00
West Coast "	1	1	...	....	...	1	....	....	....	....	...	910	3	.....	.....	.. ..	1	13	1,590 00
Kwawkewlth "	1	...	....	....	...	....	....	....	....	....	....	805	.....	.....	.. .	.....	.....	...	2,660 00
Lower Fraser "	3	3	....	....	....	....	....	....	....	....	....	2,110	104	6	9	2	.....	6	16,223 00
Williams Lake Agency	180	72	....	....	83	46	5	28	17	1	....	678	114	.....	156	11	39	22	26,441 75
Kamloops-Okanagan Agency	502	370	3	9	279	121	20	100	26	4	..	1,899	218	3	320	72	57	83	56,991 50
Kootenay Agency	108	27	....	....	....	34	4	24	2	1	....	244	57	.....	62	6	12	9	14,055 00
Northwest Coast Agency	5	4	....	....	....	....	....	....	....	....	181	3,730	5	.....	17	.....	... .	...	9,510 00
Babine and Upper Skeena River Agency	6	3	....	....	....	3	....	1	...	...	18	10,200	4	1	21	.....	.....	.	5,225 00
Cassiar Agency	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	.....	.	.....
Total	964	584	3	12	365	250	46	182	52	22	208	24,640	686	12	598	99	136	293	167,811 25
Manitoba.																			
Clandeboye Agency	75	47	1	....	....	11	5	44	2	....	12	17	76	4	91	19	16	16	26,200 00
Portage la Prairie Agency	51	27	10	....	....	25	10	24	4	...	2	250	45	10	33	41	... .	52	5,550 00
Manitowapah "	27	19	....	...	....	48	2	45	....	....	5	730	77	4	84	110	3	97	8,525 00
Norway House "	17	14	....	....	....	....	....	....	....	....	10	1,129	.....	... .	.....	.....	...	.. .	1,090 00
The Pas "	9	11	....	....	....	3	...	5	....	..	1	454	4	2	9	...	.....	.. ..	1,227 00
Birtle "	79	50	21	5	1	47	21	40	6	..	....	1,830	79	3	70	55	21	46	12,624 00
Oak River (Sioux) "	80	35	17	1	....	27	35	22	4	3	3	490	67	..	45	37	47	34	16,300 00
Total	338	203	49	6	1	161	73	180	16	3	33	4,900	348	23	332	262	87	245	71,516 00

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS.

Agency.	Live Stock and Poultry.																	Value of Live Stock and Poultry.
	Horses.			Cattle.					Other Stock.					Poultry.				
	Stallions.	Geldings and Mares.	Foals.	Bulls.	Oxen, work.	Steers.	Cows, Milch.	Young Stock	Lambs.	Sheep.	Boars.	Sows.	Other Pigs.	Turkeys.	Geese.	Ducks.	Cocks and Hens.	
																		$ cts.
NEW BRUNSWICK.																		
Richibucto Superintendency	....	30	....	....	....	70	34	....	....	....	....	....	28	....	....	....	315	3,355 00
Fredericton "	3	25	2	....	....	7	18	29	....	....	....	9	77	..	35	.	590	3,970 00
Total	3	55	2	....	....	77	52	29	..	...	....	9	105	..	35	.....	905	7,325 00
PRINCE EDWARD ISLAND.																		
Prince Edward Island Superintendency	...	7	....	....	....	....	10	13	....	....	....	1	7	..	....	.. .	100	1,280 00
NOVA SCOTIA.																		
Annapolis County	....	....	....	....	2	....	2	..	....	....	....	..	2	4	....	....	10	150 00
Shelburne "	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	40 00
Digby "	....	....	....	....	.	. .	1	....	....	....	....	....	....	....	....	....	....	20 00
Yarmouth "	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	....
Kings "	....	2	....	....	2	2	1	2	....	....	....	....	1	..	....	....	14	340 00
Queens "	....	1	....	....	4	2	4	5	6	12	....	....	6	....	....	....	....	370 00
Halifax "	....	1	....	....	....	....	7	10	....	....	....	....	....	....	....	....	150	625 00
Hants "	....	6	....	....	2	....	8	5	....	....	....	2	10	....	....	2.	150	800 00
Colchester "	....	1	....	....	....	....	1	3	....	....	....	....	....	....	....	....	25	131 00
Cumberland "	....	....	....	....	....	....	2	1	....	....	..	....	....	....	....	....	22	85 00
Pictou "	....	4	....	....	....	..	....	....	....	....	..	1	1	....	....	....	78	450 00
Antigonish and Guysborough Counties	....	2	....	....	2	4	6	4	....	....	....	....	....	12	....	....	60	425 00
Richmond County	4	2	..	....	....	....	6	9	....	....	....	....	....	....	....	....	40	650 00
Inverness "	..	12	....	2	2	5	15	12	....	....	....	....	....	....	....	....	70	1,125 00
Victoria "	...	8	1	2	....	5	20	22	5	16	....	....	5	....	....	....	150	1,300 00
Cape Breton (Sydney) County	..	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40	70 00
Lunenburg County	....	3	1	1	6	8	16	12	20	25	....	....	7	15	12	16	25	900 60

Cape Breton (Eskasoni) County	....	11	.....	....	....	10	21	20	....	25	....	....	.....	..	...	... ..	140	2,030 00
Total	4	54	2	5	21	36	110	105	31	78	....	3	32	31	12	36	974	9,111 00
BRITISH COLUMBIA.																		
Cowichan Agency	116	209	60	7	10	45	360	243	439	1,222	...	2	20	5	555	485	5,370	43,100 00
West Coast "	....	17	...	16	....	.....	76	52	4	10	....	...	.....	..	7	14	494	5,140 00
Kwawkewlth "	....	1	.....	1	...	....	4	4	..	...	.....	...	.....	.	24	34	710	722 00
Lower Fraser "	80	537	102	45	72	92	697	463	370	242	48	252	1,947	..	20	949	3,017	62,809 00
Williams Lake "	39	1,286	436	25	....	338	346	248	....	....	4	34	63	.....	.....	...	1,875	73,890 00
Kamloops-Okanagan Agency	164	3,964	1,853	72	....	344	1,453	2,239	30	37	51	384	1,096	..	36	15	2,988	332,551 50
Kootenay "	55	1,495	180	36	....	54	730	690	...	.....	.....	....	.....	.....	.....	.. .	610	90,515 00
Northwest Coast "	32	42	24	18	...	46	71	53	10	10	...	....	.....	.....	.....	20	2,450	13,600 00
Babine and Upper Skeena River Agency	85	534	39	28	....	34	325	187	....	.....	.....	.....	.....	.....	.....	....	....	56,960 00
Cassiar Agency	....	15	.....	.....	.....	.....	.....	....	..	.....	.....	.....	.....	..	.....	.... .	.....	1,500 00
Total	571	8,100	2,694	248	82	953	4,062	4,179	853	1,521	103	672	3,126	5	642	1,518	17,514	680,787 50
MANITOBIA.																		
Clandeboye Agency	4	204	19	12	128	192	246	205	...	.... .	...	.....	.....	..	.....	. .	690	30,510 00
Portage la Prairie Agency	....	151	4	5	34	14	47	67	...	.....	.....	.. .	11	..	.....	...	142	6,800 00
Manitowapah "	....	365	14	51	71	638	1,082	49	....	4	9	9	8	..	.....	.....	90	30,400 00
Norway House "	1	28	....	16	27	54	164	151	...	.....	...	.....	... .	..	.....	... .	.....	8,560 00
The Pas "	6	28	4	4	23	38	111	59	...	.....	..	...	.....	..	.....	.....	.....	8,020 00
Birtle "	3	292	.....	11	23	142	174	162	....	. ...	....	1	13	..	.....	16	171	38,469 00
Oak River (Sioux) "	1	232	17	2	....	10	38	33	...	.....	....	....	.....	14	12	20	390	17,815 00
Total	15	1,300	58	101	306	1,088	1,862	726	....	4	9	10	32	14	12	36	1,483	140,574 00

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS—*Concluded.*

Agency.	General Effects.									Household Effects.	Value of Real and Personal Property.
	Sail Boats.	Row Boats.	Canoes.	Rifles.	Shot Guns.	Nets.	Steel Traps.	Tents.	Value of	Value of	
New Brunswick.									$ cts.	$ cts.	$ cts.
Richibucto Superintendency	48	41	20	12	182	260	71	6	5,100 00	16,000 00	104,155 00
Fredericton "	2	5	126	69	58	2	500	48	3,890 00	8,875 00	88,922 50
Total	50	46	146	81	240	262	571	54	8,990 00	24,875 00	193,077 50
Prince Edward Island.											
Prince Edward Island Superintendency	10	33			16	42	7		1,113 00	2,950 00	48,643 00
Nova Scotia.											
Annapolis County			5	4	9	5	14	2	110 00	150 00	2,150 00
Shelburne "	1	2	1	1	6	2	75	2	150 00	300 00	2,350 00
Digby "			10	9	6		20	3	300 00	300 00	4,465 00
Yarmouth "		3	10	25	20	5	50	10	292 00	240 00	532 50
Kings "		1	2	6	20		40		150 00	400 00	6,490 00
Queens "		4	6	7	6	10	12	6	275 00	280 00	4,980 00
Halifax "	4	4		16	37	8	65		890 00		
Hants "	2	3	3	20	8	2	150		750 00	2,000 00	28,060 00
Colchester "				5	12		15		70 00	225 00	3,374 00
Cumberland "	3	3		12	20		20		250 00	450 00	3,555 00
Pictou "	5	5		8	5	8	12		350 00	850 00	10,905 00
Antigonish and Guysborough Counties	2	3	1		30	3	6		160 00	1,600 00	13,695 00
Richmond County	2	7			13	3	29		280 00	300 00	10,080 00
Inverness "		19		3	17	9	90		267 00	710 00	17,795 00
Victoria "		8			18		150		450 00	500 00	17,290 00
Cape Breton (Sydney) County				1	4		14		40 00	450 00	10,185 00
Lunenburg County		5	6	5	6		18	4	260 00	250 00	10,820 00
Cape Breton (Eskasoni) County	4	6			5	5	150			1,470 00	63,884 50

Total	23	73	44	122	242	60	930	27	5,044 00	10,475 00	210,611 00
British Columbia.											
Cowichan Agency	161	2	427	364	319	67	30	180	26,655 00	33,150 00	1,066,750 00
West Coast "	119	4	1,222	142	397	46	810	290	37,075 00	30,500 00	197,057 00
Kwawkewlth Agency	67	44	303	281	186	159	2,650	71	22,325 00	52,100 00	154,898 50
Lower Fraser "	113	158	486	428	454	117	1,129	408	45,415 00	62,470 00	1,230,495 00
Williams Lake "	.....	23	92	414	130	156	1,235	241	12,701 00	14,079 00	481.526 25
Kamloops-Okanagan Agency	4	48	145	678	272	470	1,521	1,020	21,001 00	46,050 00	2,971,882 92
Kootenay Agency	.....	.....	57	187	29	.....	136	146	5,030 00	4,260 00	294,934 00
Northwest Coast Agency	328	212	1,239	1,095	349	357	11,980	132	124,930 00	114,200 00	646,764 00
Babine and Upper Skeena River Agency	.....	1	393	711	407	100	6,950	66	52,550 00	24,750 00	342,424 00
Cassiar Agency	.....	1	3	130	30	8	1,600	100	6,040 00	1,350 00	19,565 00
Total	792	493	4,367	4,430	2,573	1,480	27,741	2,654	353,722 00	382,909 00	7,406,296 67
Manitoba.											
Clandeboye Agency	7	215	40	46	111	312	961	234	11,950 00	18,100 00	529,670 00
Portage la Prairie Agency	.....	12	4	32	58	34	1,150	97	1,450 00	2,300 00	213,958 00
Manitowapah "	28	144	138	85	300	667	4,985	269	10,550 00	9,700 00	219,318 00
Norway House "	12	431	279	73	432	1,480	2,826	598	29,500 00	19,550 00	242,872 00
The Pas "	.....	21	312	90	305	495	3,725	217	16,492 00	8,200 00	106,035 00
Birtle "	.....	3	.....	34	61	2	1,260	100	1,887 00	3,750 00	393,600 00
Oak River (Sioux) "	.....	.....	10	42	62	.....	1,535	75	3,350 00	4,600 00	226,060 00
Total	47	826	783	402	1,329	2,980	16,442	1,590	75,179 00	66,200 00	1,931,513 00

AGRICULTURAL AND INDUSTRIAL STATISTICS.

AGRICULTURE, SEASON 1907.

Agency.	Grain, Roots and Fodder.																			
	Wheat.		Oats.		Barley.		Corn.		Peas.		Rye.		Buck-wheat.		Beans.		Potatoes.		Carrots.	
	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.
NEW BRUNSWICK.																				
Richibucto Superintendency	11	105	177	1,795	....	....	....	....	....	....	....	....	4	55	....	....	180	6,700	....	....
Fredericton "	6¼	120	43	1,100	....	....	2	42	3¾	75	....	....	28½	685	6¼	123½	29¼	1,605	....	....
Total	17¼	225	220	2,895	....	....	2	42	3¾	75	....	....	32½	740	6¼	123½	209¼	8,305	....	....
PRINCE EDWARD ISLAND.																				
Prince Edward Island Superintendency	6	60	29	616	....	....	½	6	....	....	....	....	....	....	....	....	8	820	....	....
NOVA SCOTIA.																				
Annapolis County	....	....	....	....	....	....	....	....	....	....	....	....	....	....	¼	3	2	275	....	....
Shelburne "	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Digby "	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	½	25	....	....
Yarmouth "	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kings "	....	....	5	100	....	....	....	....	....	....	....	....	1	25	½	15	3	490	....	....
Queens "	....	....	1	25	½	15	....	....	....	....	....	....	½	12	....	....	2	250	....	....
Halifax "	....	....	14	450	....	....	....	....	....	....	....	....	....	....	6¼	....	12½	....	....	....
Hants "	....	....	12	150	....	....	....	....	....	....	....	....	1	5	....	....	5	200	....	....
Colchester "	....	....	4	45	....	....	....	....	....	....	....	....	....	....	....	....	1½	150	....	....
Cumberland "	....	....	½	15	....	....	....	....	....	....	....	....	....	....	....	....	5	800	....	....
Pictou "	4½	45	7	60	....	....	....	....	....	....	....	....	....	....	....	....	7½	630	....	....
Antigonish and Guysborough Counties	....	....	4	75	....	....	....	....	....	....	....	....	....	....	....	....	4	300	....	....

Richmond County			6	175			2	25	½	5					¼	4	25	500	
Inverness "			5	70			1	15							¼	4	24	205	
Victoria "			5	40													8	550	
Cape Breton (Sydney) County																	¼	25	
Lunenburg County	1	28	5	110	½	15					1	22	1½	30	½	18	5	700	
Cape Breton (Eskasoni) County			20	200	10	150											22	1,386	
Total	5½	73	88½	1,515	11	280	3	40	½	5	1	22	4	72	8	44	127¼	6,396	
BRITISH COLUMBIA.																			
Cowichan Agency	10	355	243	12,510					3	90							56	3,370	
West Coast "																	1¼	136	
Kwawkewlth Agency																	7½	780	2½ 270
Lower Fraser "	81	3,220	448	28,320			21¼	1,260	180	6,670					19¼	646	268	46,297	16½ 2,103
Williams Lake "	126	2,305	101	1,590					13	261					2	67	219	7,122	21 807
Kamloops-Okanagan Agency	1,678	12,903	3,381	46,675	4	80	40½	568	148	3,071					130	2,470	375	41,050	61 6,255
Kootenay Agency	70	1,050	1,095	19,080													65	9,550	
Northwest Coast Agency																	115	14,700	
Babine and Upper Skeena River Agency																	423	78,300	
Cassiar Agency																			
Total	1,965	19,833	5,268	108,175	4	80	61¾	1,828	344	10,092					151¼	3,183	1,529¾	201,305	101 9,435
MANITOBA.																			
Clandeboye Agency	68	1,020	131	3,930	5	100											32	5,100	5½ 57
Portage la Prairie Agency	551	5,109	182	3,578	28	414											8½	785	
Manitowapah "																	39½	4,200	¼ 30
Norway House "			10	350	4	90											82¾	2,080	
The Pas "																	37	2,744	
Birtle "	714	6,593	938	26,391	17	407	11½	57									38½	1,542	
Oak River (Sioux) "	1,989	23,604	369	10,270	4	102	5½	233									7½	1,719	
Total	3,322	36,326	1,630	44,519	58	1,113	16¾	290									245¾	18,170	5¾ 87

*Not given.

AGRICULTURAL AND INDUSTRIAL STATISTICS.

AGRICULTURE, SEASON 1907.

Agency.	Grain, Roots and Fodder—*Concluded.*							New Land Improvements.			
	Turnips.		Other Roots.		Hay.						
	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Cultivated.	Wild.	Other fodder.	Land Cleared.	Land Broken.	Land Cropped for first time.	Land Fenced.
New Brunswick.					Tons.	Tons.	Tons.	Acres.	Acres.	Acres.	Acres.
Richibucto Superintendency					87	8	50	11			
Fredericton "	2	300	5½	161	100	9	22	5		125	2
Total	2	300	5½	161	187	17	72	16		125	2
Prince Edward Island.											
Prince Edward Island Superintendency	1½	240			32	24		2	2	2	2
Nova Scotia.											
Annapolis County					5	4					2
Shelburne "					3½						
Digby "					10						
Yarmouth "					1	½					
Kings "					1	2		1		2	20
Queens "	½	150	1	250	20	10	2	½	1	2½	2½
Halifax "		40			27	2					
Hants "			1	20	75		2				
Colchester "					5						
Cumberland "					2						
Pictou "	½	40			6						
Antigonish and Guysborough Counties					40	3					
Richmond County	3	45			25	3		4		3	4
Inverness "	2¼	17			120	45	5			¼	
Victoria "					90	120	3				

Cape Breton (Sydney) County											
Lunenburg County	1½	250	1½	25	60	25	15	2	2½		4½
Cape Breton (Eskasoni) County	2	130			221						
Total	9¾	672	3½	295	691½	214½	27	7½	3½	7¾	33
British Columbia.											
Cowichan Agency					856						
West Coast "					18½	½					
Kwawkewlth "	¼	40	½	40							
Lower Fraser "	33½	5,582			662	928	400	28	28	26	10
Williams Lake Agency	19½	1,347	10	533	744	1,206	290	25	15		100
Kamloops-Okanagan Agency	60	6,770	5	600	5,809	675	832	8	8	6	
Kootenay "					305	375	122	15	15	15	15
Northwest Coast "	1½	300			20	210		20	22	22	
Babine and Upper Skeena River Agency	78	22,850			135	291	64	5	20	19	49
Cassiar Agency						5					
Total	192¾	36,889	15½	1,173	8,549½	3,690½	1,708	101	108	88	174
Manitoba.											
Clandeboye Agency	3½	85	1	20		4,395					
Portage la Prairie Agency						1,200			15	15	
Manitowapah "	1¼	35	¼	35		4,275		1	16	17	27
Norway House "						1,154					
The Pas "						526			2½	2½	16
Birtle "			10	166	9	1,425	1,230		167		
Oak River (Sioux) "			¼	61		1,144	812		60		
Total	4¾	120	11½	282	9	14,119	2,042	1	260	34½	43

AGRICULTURAL AND INDUSTRIAL STATISTICS *Continued.*

PROGRESS DURING THE YEAR 1907.

Agency.	Buildings Erected.													Increase in Value.		
	Dwellings, Stone.	Dwellings, Brick.	Dwellings, Frame.	Dwellings, Log.	Shanties.	Barns.	Horse Stables.	Driving Sheds.	Cattle Stables.	Pig Sties.	Storehouses.	Root Houses.	Milk Houses.	Corn Cribs.	Value of New Land Improvements.	Value of Buildings Erected.	Total Value of New Land Improvements and Buildings.
New Brunswick.															$ cts.	$ cts.	$ cts.
Richibucto Superintendency			4												90 00	500 00	590 00
Fredericton "					4										370 00	60 00	430 00
Total			4		4										460 00	560 00	1,020 00
Prince Edward Island.																	
Prince Edward Island Superintendency			1			1	1		1		2				20 00	600 00	620 00
Nova Scotia.																	
Annapolis County															10 00		10 00
Shelburne "			4		1	2				1		1				200 00	200 00
Digby "																	
Yarmouth "																	
Kings "			11		1		1		1						260 00	300 00	560 00
Queens "			1		2					1					100 00	150 00	250 00
Halifax "																	
Hants "			2		1											200 00	200 00
Colchester "																	
Cumberland "			1													100 00	100 00
Pictou "																	
Antigonish and Guysborough Counties			3													200 00	200 00
Richmond County			3		2					1					75 00	100 00	175 00
Inverness "					3	6							1			150 00	150 00
Victoria "			1			1										200 00	200 00
Cape Breton (Sydney) County			2													200 00	200 00
Lunenburg County			1		2					2	1					240 00	240 00

Cape Breton (Eskasoni) County	3		2											640 00	640 00
Total	32		14	9	1		1	5	1	1	1		385 00	2,680 00	3,065 00
British Columbia.															
Cowichan Agency	7													2,000 00	2,000 00
West Coast "	25													3,780 00	3,780 00
Kwawkewlth "															
Lower Fraser "	10	1	2	2						1			1,380 00	3,015 00	4,395 00
Williams Lake "		15											175 00	1,300 00	1,475 00
Kamloops-Okanagan Agency	6	1			1								3,390 00	1,450 00	4,840 00
Kootenay Agency	2												90 00	250 00	340 00
Northwest Coast Agency	15												2,100 00	8,600 00	10,700 00
Babine and Upper Skeena River Agency	12	16	6				1						4,180 00	8,550 00	12,730 00
Cassiar Agency		1												250 00	250 00
Total	77	34	8	2	1		1			1			11,315 00	29,195 00	40,510 00
Manitoba.															
Clandeboye Agency		1												100 00	100 00
Portage la Prairie Agency		1	1										60 00	75 00	135 00
Manitowapah "		17			22				8				205 00	1,400 00	1,605 00
Norway House "		25					5		1					3,500 00	3,500 00
The Pas "		15	6		14		11						210 00	3,955 00	4,165 00
Birtle "	2		13		5		4		7		1		668 00	1,905 00	2,573 00
Oak River (Sioux) "													180 00		180 00
Total	2	59	20		41		20		16		1		1,323 00	10,935 00	12,258 00

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

SOURCES AND VALUE OF INCOME.

Agency.	Value of Farm Products, including Hay.	Value of Beef sold, also of that used for Food.	Wages earned.	Received from Land Rentals.	The Estimated Value of Fish and Meat used for Food is included in these Columns.		Earned by other Industries.	Total Income of Indians.
					Earned by Fishing.	Earned by Hunting and Trapping.		
New Brunswick.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Richibucto Superintendency	4,300 00		25,300 00		10,350 00	325 00	10,650 00	50,925 00
Fredericton "	2,995 50	5,400 00	29,850 00	20 00	255 00	6,700 00	14,300 00	59,520 50
Total	7,295 50	5,400 00	55,150 00	20 00	10,605 00	7,025 00	24,950 00	110,445 50
Prince Edward Island.								
Prince Edward Island Superintendency	1,312 80	40 00	120 00		2,545 00	20 00	14,030 00	18,067 80
Nova Scotia.								
Annapolis County	200 00		700 00		120 00	100 00	400 00	1,520 00
Shelburne "	100 00		1,500 00		250 00	600 00	250 00	2,700 00
Digby "	90 00		700 00		10 00	475 00	600 00	1,875 00
Yarmouth "			200 00		90 00	60 00	50 00	400 00
Kings "	350 00		4,000 00		500 00	1,000 00	2,510 00	8,360 00
Queens "	1,400 00	250 00	180 00		550 00	400 00	425 00	3,205 00
Halifax "	960 00							960 00
Hants "	750 00		100 00		100 00	1,000 00	2,000 00	3,950 00
Colchester "	113 00		3,200 00		25 00	350 00	1,300 00	4,988 00
Cumberland "	700 00		2,000 00		30 00	1,500 00	1,600 00	5,830 00
Pictou "	480 00		1,250 00		900 00	30 00	480 00	3,140 00
Antigonish & Guysborough Counties	500 00		1,500 00	6 00	500 00		6,500 00	9,006 00
Richmond County	700 00	100 00	1,000 00		800 00	100 00	700 00	3,400 00
Inverness "	2,075 00	150 00	3,300 00		500 00	250 00	400 00	6,675 00
Victoria "	2,400 00	250 00	1,250 00		500 00	325 00	4,000 00	8,725 00
Cape Breton (Sydney) County								
Lunenburg County	1,400 00	400 00	2,670 00		800 00	500 00	500 00	6,270 00

Cape Breton (Eskasoni) County	3,215 00	300 00	2,850 00	.....	100 00	100 00	11,400 00	17,965 00
Total	15,433 00	1,450 00	26,400 00	6 00	5,775 00	6,790 00	33,115 00	88,969 00
British Columbia.								
Cowichan Agency	22,625 00	3,980 00	28,400 00	.....	28,850 00	2,000 00	1,150 00	87,005 00
West Coast "	445 00	65 00	16,100 00	.....	28,810 00	4,500 00	37,750 00	87,670 00
Kwawkewlth "	565 00	.....	6,160 00	.....	52,450 00	4,850 00	40,150 00	104,175 00
Lower Fraser "	49,202 00	5,165 00	77,360 00	667 50	55,972 00	41,418 00	69,559 00	299,343 50
Williams Lake Agency	34,321 00	2,735 00	35,350 00	160 00	15,670 00	17,280 00	10,300 00	115,816 00
Kamloops-Okanagan Agency	135,203 00	10,795 00	152,000 00	733 33	30,850 00	20,500 00	17,500 00	367,581 33
Kootenay "	28,317 00	4,050 00	10,100 00	.....	1,785 00	7,225 00	1,975 00	53,452 00
Northwest Coast "	12,850 00	.....	46,250 00	50 00	114,230 00	23,700 00	24,000 00	221,080 00
Babine & Upper Skeena River Agency	41,300 00	2,500 00	29,700 00	.....	20,000 00	51,800 00	34,800 00	180,100 00
Cassiar Agency	.....	.....	12,000 00	.....	100 00	12,000 00	1,600 00	25,700 00
Total	324,828 00	29,290 00	413,420 00	1,610 83	348,717 00	185,273 00	238,784 00	1,541,922 83
Manitoba.								
Clandeboye Agency	20,075 00	6,810 00	21,800 00	30 00	3,350 00	7,100 00	7,200 00	66,365 00
Portage la Prairie Agency	7,520 00	550 00	4,800 00	.....	525 00	4,850 00	2,600 00	20,845 00
Manitowapah "	8,890 00	3,075 00	10,075 00	.....	17,215 00	12,541 00	5,371 00	57,167 00
Norway House "	12,200 00	.....	6,650 00	.....	14,050 00	22,450 00	2,200 00	57,550 00
The Pas "	2,914 50	846 95	8,150 00	.....	15,400 00	18,100 00	316 90	45,728 35
Birtle "	20,586 18	2,674 00	5,425 00	.....	515 00	3,200 00	2,521 00	34,921 18
Oak River (Sioux) "	21,002 00	550 00	1,450 00	.....	445 00	4,250 00	545 00	28,242 00
Total	93,187 68	14,505 95	58,350 00	30 00	51,500 00	72,491 00	20,753 90	310,818 53

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

REALTY OF INDIANS.

Agency.	Lands and Sources from which Indians Derive their Support.						Public Buildings, Property of the Band.										Value of Public Properties, &c.
	Cleared but not under Cultivation.	Under actual Cultivation.	Number engaged in Farming.	Number engaged in Hunting, Trapping and Fishing.	Number engaged in other industries.	Number engaged in Stock raising.	Saw Mills.	Grist Mills.	Threshers.	Engines.	Other Machinery.	Churches.	Council Houses.	School Houses.	Driving Sheds.	Other Buildings.	Ferries.	
SASKATCHEWAN.	Acres.	Acres.																
Pelly Agency, Treaty No. 4	46,912	520	43	40	.....	96	....	....	1	1	17	4	....	3	2	13	....	12,500 00
Assiniboine " " 4	17,004	930	26	8	5	18	....	....	1	1	75	....	....	....	....	....	....	6,215 00
Moose Mountain " " 4	10,160	658	22	25	7	30	....	....	1	1	....	....	....	1	1	2	....	2,900 00
Qu'Appelle " " 4	144,751	6,503	105	11	450	130	....	....	2	2	1	1	....	....	....	1	....	4,530 00
Crooked Lakes " " 4	100,053	1,642	50	.....	.....	66	....	....	....	....	....	....	....	....	....	1	....	.....
Touchwood Hills " " 4	87,346	1,056	64	133	186	93	....	....	1	1	....	1	....	3	....	....	....	6,675 00
Battleford " " 6	166,599	1,487	117	10	182	195	....	....	3	1	....	....	....	7	....	....	....	5,300 00
Carlton " " 6	134,092	1,166	444	1,334	925	511	1	1	2	2	1	2	....	7	....	4	....	12,975 00
Duck Lake " " 6	88,979	384	34	145	2	118	....	....	3	1	....	2	....	3	....	....	1	6,050 00
Onion Lake " " 6	140,367	169	40	164	22	134	....	1	....	....	....	....	....	....	....	....	....	2,800 00
Total	930,263	14,515	945	1,870	1,779	1,391	1	2	14	10	94	10	....	24	3	21	1	59,945 00
ALBERTA.																		
Edmonton Agency, Treaty No. 6	34,135½	1,280	24	73	57	69	2	....	1	1	....	....	....	3	....	....	....	14,350 00
Hobbema " " 6	69,808½	471½	95	57	55	69	1	1	....	....	1	....	....	1	....	....	....	10,900 00
Saddle Lake " " 6	65,913	1,317	107	132	....	107	1	....	....	1	....	....	....	4	....	....	....	2,625 00
Stony " " 7	45,530	190	50	100	100	60	....	....	....	....	....	1	....	2	1	....	....	1,100 00
Sarcee " " 7	58,120	218	20	16	6	23	....	....	....	....	....	1	1	1	1	....	....	11,000 00
Blackfoot " " 7	299,950	250	24	.....	.....	144	....	....	....	....	....	....	....	....	....	....	....	.....
Blood " " 7	348,476	850	15	....	10	316	....	....	....	....	....	....	....	3	....	2	....	22,200 00
Peigan " " 7	114,895	401	14	....	150	145	1	....	....	....	1	1	....	1	1	2	....	14,400 00
Total	1,036,827¾	4,977½	349	378	378	933	5	1	1	2	2	3	1	15	3	4	....	76,475 00

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

REALTY OF INDIANS—*Concluded.*

Agency.	Private Fencing and Buildings.																Value of Private Fencing.	Value of Private Buildings.	Total Value of Private Fencing and Buildings.
	Acres Fenced.	Dwellings, Stone.	Dwellings, Brick.	Dwellings, Frame.	Dwellings, Log.	Shanties.	Barns.	Horse Stables.	Driving Sheds.	Cattle Stables.	Pig Sties.	Store Houses.	Root Houses.	Milk Houses.	Corn Cribs.				
																	$ cts.	$ cts.	$ cts.
SASKATCHEWAN.																			
Pelly Agency, Treaty No. 4	1,707	..	..	1	33	36	..	27	..	60	..	16	..	5	3		4,149 00	6,950 00	11,099 00
Assiniboine " " 4	6,550	..	..	2	40	..	..	8	..	24	..	..	..	..	..		815 00	2,020 00	2,835 00
Moose Mountain " " 4	1,480	..	..	..	6	41	..	23	..	28	..	..	..	..	..		10 00	4,100 00	4,110 00
Qu'Appelle " " 4	27,798½	..	..	2	169	4	..	101	..	122	7	2	..	1	71		15,798 50	31,300 00	47,098 50
Crooked Lakes " " 4	3,106	..	..	..	29	71	..	59	..	84	13	35	4	3	..		9,318 00	14,400 00	23,718 00
Touchwood Hills " " 4	15,789	..	..	..	101	16	..	68	5	105	4	20	..	2	3		3,101 35	11,715 00	14,816 35
Battleford " " 6	28,320	..	..	..	212	..	..	45	..	156	16	14	43	..	..		20,440 00	17,530 00	37,970 00
Carlton " " 6	2,217	..	..	..	95	174	2	73	..	142	6	48	7	8	..		3,067 00	16,283 00	19,350 00
Duck Lake " " 6	4,419	..	..	2	126	1	..	26	150	..	..	12	..	..	..		22,995 00	23,800 00	46,795 00
Onion Lake " " 6	370	..	..	..	107	..	..	..	..	64	..	6	..	..	..		880 00	6,920 00	7,800 00
Total	91,756½	..	..	7	918	343	2	430	155	779	46	153	54	19	77		80,573 85	135,018 00	215,591 85
ALBERTA.																			
Edmonton Agency, Treaty No. 6	2,426	..	..	2	37	74	1	56	12	57	6	23	18	4	8		1,570 00	12,700 00	14,270 00
Hobbema " " 6	1,035	..	..	..	127	8	..	53	..	43	..	16	52	..	..		792 00	18,010 00	18,802 00
Saddle Lake " " 6	2,350	..	..	..	172	..	..	13	..	158	..	18	2	..	..		6,270 00	12,115 00	18,385 00
Stony " " 7	11,000	..	..	..	130	..	..	44	..	25	..	..	20	..	..		7,000 00	14,000 00	21,000 00
Sarcee " " 7	69,120	..	..	2	50	..	..	28	1	18	..	2	1	2	..		7,000 00	4,000 00	11,000 00
Blackfoot " " 7	13,220	15	..	13	122	..	..	72	3	52	1	3	7	1	..		1,100 00	14,980 00	16,080 00
Blood " " 7	1,900	..	..	4	210	..	..	70	..	100	..	..	18	..	..		2,700 00	4,895 00	7,595 00
Peigan " " 7	4,500	..	..	21	95	..	..	37	25	..	..	..	20	..	..		9,000 00	7,540 00	16,540 00
Total	105,551	15	..	42	943	82	1	373	41	453	7	62	138	7	8		35,432 00	88,240 00	123,672 00

AGRICULTURAL AND INDUSTRIAL STATSTICS.—*Continued.*

PERSONALTY OF INDIANS.

Agency.	Agricultural Implements, Vehicles, &c.																		Value of Implements and Vehicles.
	Ploughs.	Harrows.	Seed Drills.	Cultivators.	Land Rollers.	Mowers.	Reapers and Binders.	Horse Rakes.	Fanning Mills.	Threshing Machines.	Tool Chests.	Other Implements.	Wagons.	Carts.	Sleighs, Draught.	Sleighs, Driving.	Democrat Wagons.	Buggies and Road Carts.	
SASKATCHEWAN.																			$ cts.
Pelly Agency, Treaty No. 4	61	36	2	....	....	37	6	38	1	1	5	662	63	31	59	29	12	36	10,050 00
Assiniboine " " 4	33	12	4	1	....	16	4	7	1	1	....	50	30	7	22	14	3	12	8,810 00
Moose Mountain " " 4	24	8	3	....	....	16	3	11	2	1	1	210	34	2	26	11	7	20	4,500 00
Qu'Appelle " " 4	131	29	31	....	....	82	35	72	13	26	1	1503	167	16	132	51	34	63	27,840 00
Crooked Lakes " " 4	62	37	16	11	....	46	16	45	5	....	....	460	82	7	77	65	13	39	20,021 00
Touchwood Hills " " 4	66	24	7	11	....	51	11	45	3	1	3	656	94	22	69	50	9	17	14,586 00
Battleford " " 6	135	58	....	....	....	90	14	73	9	....	....	1387	162	14	134	139	31	53	26,215 00
Carlton " " 6	85	65	4	....	....	54	15	46	4	....	....	1631	99	12	94	83	18	32	18,271 00
Duck Lake " " 6	91	63	13	11	3	49	14	51	2	....	14	2065	79	55	74	62	12	44	27,056 00
Onion Lake ½ " " 6	28	15	....	....	....	43	....	38	....	....	1	670	76	10	33	....	....	26	8,083 00
Total	716	347	80	34	3	484	118	426	40	30	25	9294	886	176	720	504	139	342	165,432 00
ALBERTA.																			
Edmonton Agency, Treaty No. 6	51	37	10	....	1	45	12	45	3	1	5	359	65	....	65	13	4	11	13,730 00
Hobbema " " 6	98	45	3	2	2	47	4	34	....	....	3	534	112	38	98	56	1	13	13,389 00
Saddle Lake " " 6	41	35	1	....	....	33	4	29	....	....	....	794	72	7	95	....	5	7	20,275 00
Stony " " 7	31	6	....	....	....	30	....	30	....	....	....	45	72	....	60	....	2	....	8,950 00
Sarcee " " 7	8	2	1	1	1	14	2	10	1	....	1	280	26	4	17	2	4	4	4,000 00
Blackfoot " " 7	51	19	1	3	2	71	1	66	1	1	2	270	163	....	28	55	17	50	20,480 00
Blood " " 7	15	2	....	....	....	91	....	89	....	....	7	2000	295	....	....	....	50	50	53,466 25
Peigan " " 7	20	8	1	....	....	47	2	50	1	....	....	350	100	....	3	5	20	20	6,985 00
Total	315	154	17	6	6	378	25	353	6	2	18	4632	905	49	366	131	103	155	141,275 25

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS—*Continued.*

Agency.	Live Stock and Poultry.																Value of Live Stock and Poultry.
	Horses.			Cattle.					Other Stock.				Poultry.				
	Stallions.	Geldings and Mares.	Foals.	Bulls.	Oxen, Work.	Steers.	Cows, Milch.	Young Stock.	Sheep.	Boars.	Sows.	Other Pigs.	Turkeys.	Geese.	Ducks.	Cocks and Hens.	
SASKATCHEWAN.																	$ cts.
Pelly Agency, Treaty No. 4	....	166	...	14	50	83	309	319	....	....	....	....	....	....	....	136	31,450 00
Assiniboine " " 4	....	98	40	4	25	1	37	95	....	....	....	....	....	....	..	.....	7,905 00
Moose Mountain " " 4	4	115	3	4	19	49	92	83	....	....	....	....	....	....	....	24	1,200 00
Qu'Appelle " " 4	18	499	75	19	51	326	344	544	....	9	48	57	..	.	...	297	78,787 00
Crooked Lakes " " 4	3	288	28	9	43	21	161	375	....	....	....	48	....	....	....	140	35,020 00
Touchwood Hills " " 4	10	333	31	16	30	137	455	461	....	....	6	....	....	....	2	86	58,115 00
Battleford " " 6	13	495	....	28	118	96	337	492	96	..	...	74	....	....	....	310	60,874 00
Carlton " " 6	2	321	...	16	149	232	445	464	....	3	10	....	6	....	....	211	60,271 50
Duck Lake " " 6	....	256	31	2	23	104	316	528	....	.	....	...	60	...	25	380	42,075 00
Onion Lake " " 6	2	337	....	3	42	82	322	599	....	....	..	..	....	....	....	....	47,565 00
Total	52	2,908	208	115	550	1,131	2,818	3,960	96	12	64	179	66	...	27	1,584	423,262 50
ALBERTA.																	
Edmonton Agency, Treaty No. 6	1	320	9	...	4	54	178	241	....	10	25	64	5	2	....	200	37,300 00
Hobbema " " 6	....	393	36	..	8	64	242	268	....	....	....	....	....	....	....	....	35,265 00
Saddle Lake " " 6	3	264	52	1	66	85	272	479	38	3	28	34	10	12	...	375	52,682 00
Stony " " 7	....	1,020	..	....	....	93	489	275	...	....	....	....	..	....	....	....	37,925 00
Sarcee " " 7	....	350	...	....	....	....	120	300	....	....	....	....	....	...	....	150	17,475 00
Blackfoot " " 7	44	2,575	150	3	....	450	437	583	....	....	....	....	22	....	....	45	110,090 00
Blood " " 7	29	3,036	39	127	....	946	2,230	2,234	....	....	....	....	....	....	....	.....	184,650 00
Peigan " " 7	....	700	200	...	....	209	451	505	....	....	....	....	...	....	....	....	38,145 00
Total	77	8,658	486	131	78	1,901	4,419	4,885	38	13	53	98	37	14	...	770	513,532 00

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PERSONALTY OF INDIANS—*Continued.*

Agency.	General Effects.								Household Effects.	
	Row Boats.	Canoes.	Rifles.	Shot Guns.	Nets.	Steel Traps.	Tents.	Value of.	Value of.	Value of Real and Personal Property.
								$ cts.	$ cts.	$ cts.
Saskatchewan.										
Pelly Agency, Treaty No. 4	1	.....	25	91	4	775	83	1,925 00	5,850 00	611,438 00
Assiniboine " " 4	.....	.....	14	44	.....	125	40	1,080 00	800 00	287,421 00
Moose Mountain " " 4	.....	.....	12	33	.....	115	55	1,300 00	800 00	219,970 00
Qu'Appelle " " 4	3	.....	57	106	28	331	182	3,750 00	12,200 00	1,464,749 50
Crooked Lakes " " 4	.....	.....	17	46	12	110	101	1,693 50	3,960 00	698,613 50
Touchwood Hills " " 4	.....	.....	31	82	1	1,561	107	2,647 30	4,725 00	169,007 65
Battleford " " 6	8	8	86	159	72	680	195	6,157 00	11,700 00	920,979 00
Carlton " " 6	8	227	167	231	274	3,072	238	14,475 00	5,677 00	647,474 00
Duck Lake " " 6	19	28	50	183	69	4,000	182	9,150 00	14,600 00	694,017 00
Onion Lake " " 6	2	75	56	108	104	1,385	188	5,625 00	3,825 00	731,780 00
Total	41	338	515	1,083	564	12,154	1,371	47,802 80	64,137 00	645,449 65
Alberta.										
Edmonton Agency, Treaty No. 6	.....	20	70	86	60	2,000	125	3,290 00	2,900 00	559,901 00
Hobbema " " 6	.....	.....	20	95	120	305	133	1,670 00	1,820 00	788,972 00
Saddle Lake " " 6	24	69	28	123	118	1,082	104	4,196 00	3,880 00	300,796 00
Stony " " 7	.....	.....	130	15	2	220	140	3,250 00	9,000 00	248,855 00
Sarcee " " 7	.....	.....	6	8	.....	45	75	500 00	2,000 00	977,917 00
Blackfoot " " 7	11	.....	52	41	.....	38	130	4,730 00	12,800 00	1,309,983 00
Blood " " 7	1	.....	40	10	.....	40	190	2,320 00	6,000 00	3,820,341 25
Peigan " " 7	8	.....	20	35	.....	.....	100	1,339 00	4,000 00	667,794 00
Total..	44	89	366	413	300	3,730	997	21,295 00	42,400 00	8,674,559 25

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

AGRICULTURE, SEASON 1907.

Agency.	Grain, Roots and Fodder.																
	Wheat.		Oats.		Barley.		Potatoes.		Carrots.		Turnips.		Other Roots.		Hay.		Other Fodder.
	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Acres Sown.	Bushels Harvested.	Cultivated.	Wild.	
SASKATCHEWAN.															Tons	Tons.	Tons.
Pelly Agency, Treaty No. 4	54	480	454	15,571	55½	1,882	8	1,575	1¼	110	1¼	210	1½	100	.....	2,108	2,678
Assiniboine Agency, Treaty No. 4	570	4,930	173	3,940	.....	.....	7¼	800	.....	52	2¾	100	....	.....	.....	925	160
Moose Mountain Agency, Treaty No. 4	168	2,000	109	1,238	.....	.....	2½	300	.....	60	.....	100	.....	.....	.....	550	300
Qu'Appelle " " 4	2,482½	23,286	1,012½	17,759	3	36	23½	2,120	2¼	115	11½	1,070	5¾	365	.....	3,563	1,946
Crooked Lakes " " 4	711	5,417	443	7,310	.....	.....	7	475	.....	.....	.....	.....	2¼	185	.....	1,700	1,100
Touchwood Hills " " 4	118½	763	552½	11,582	57½	1,118	10	1,008	¾	41	4¼	135	9¾	330	.....	2,350	1,500
Battleford " " 6	283	3,312	458	7,934	10	80	.....	.....	.....	.....	.....	.....	28	4,520	56	4,967	1,198
Carlton " " 6	315½	3,429	490¾	9,644	29	389	15¾	1,820	½	57	¾	117	¼	11½	.....	2,297	2,088
Duck Lake " " 6	103	1,403	206	5,357	23½	349	13¼	1,220	1½	115	2¾	210	1	52	.....	3,538	144
Onion Lake " " 6	.....	.....	153	2,607	5	107	6	1,070	4	51	...	117	....	38	.....	2,725	180
Total	4,805½	45,020	4,051¾	82,942	183½	3,961	93¼	10,388	11½	601	23½	2,059	48½	5,601½	56	24,723	11,294
ALBERTA.																	
Edmonton Agency, Treaty No. 6	72	345	424	10,632	75	1,229	27	2,300	7	350	9	700	...	.....	.....	2,275	400
Hobbema " " 6	95	574	360	9,707	.....	.....	11	1,700	.....	.....	.....	.....	5½	815	.....	2,521	635
Saddle Lake " " 6	74	1,388	208	10,846	70	1,429	15	795	5	110	26	590	6	75	.....	3,632	130
Stony " " 7	.....	.....	150	*	.....	.....	4	.....	.....	.....	1½	.....	¼	.....	.....	1,300	200
Sarcee " " 7	.....	.....	147½	538	....	.....	8½	1,000	.....	.....	3¾	500	8¾	100	13	1,300	500
Blackfoot " " 7	.....	.....	55	152	.....	...	7	685	2¾	178	4¾	285	3	110	.....	2,250	90
Blood " " 7	.....	.....	100	2,000	.....	....	10	70	.....	.....	.....	.....	.....	.....	.....	2,161	.....
Peigan " " 7	80	1,080	98	2,528	....	....	15	1,550	.....	....	5	440	....	.....	.....	800	450
Total	321	3,387	1,542	36,403	145	2,658	97½	8,100	14¾	638	49¾	2,515	23¾	1,100	13	16,239	2,405

* Used for fodder.

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PROGRESS DURING THE YEAR 1907.

Agency.	New Land Improvements.				Buildings Erected.									
	Land Cleared.	Land Broken.	Land Cropped for first time.	Land Fenced.	Dwellings, Frame.	Dwellings, Log.	Shanties.	Barns.	Horse Stables.	Cattle Stables.	Pig Sties.	Store houses.	Root houses.	Corn Cribs.
SASKATCHEWAN.	Acres.	Acres.	Acres.	Acres.										
Pelly Agency, Treaty No. 4	....	197½	39	39	3	6	20	....	6	20	....	1	....	....
Assiniboine " " 4	....	105	50	....	2	....	....	....	....	....	....	....	....	....
Moose Mountain " " 4	....	30	30	....	....	....	15	....	4	8	....	....	....	....
Qu'Appelle " " 4	....	533	828½	4,300	1	8	17	....	11	11	....	....	....	7
Crooked Lakes " " 4	....	271	84	116	....	8	4	....	5	8	....	....	....	....
Touchwood Hills " " 4	....	216	188¼	206	....	9	2	....	10	6	....	1	....	....
Battleford " " 6	....	81	81	630	....	18	....	....	6	9	....	1	3	....
Carlton " " 6	56	268	67	42	....	11	10	....	11	12	....	4	....	....
Duck Lake " " 6	....	104	72	1,429	2	40	....	....	8	41	....	2	....	....
Onion Lake " " 6	....	....	27	35	..	4	....	....	....	3	....	....	....	....
Total	56	1,805½	1,466¾	6,797	8	104	68	....	61	118	....	9	3	7
ALBERTA.														
Edmonton Agency, Treaty No. 6	87	75	14	13	....	11	11	....	5	8	1	....	....	....
Hobbema " " 6	....	....	....	....	....	15	....	....	....	3	....	1	....	....
Saddle Lake " " 6	....	150	105	....	....	....	....	....	....	....	....	....	....	....
Stony " " 7	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sarcee " " 7	....	10	....	60	....	4	....	....	4	6	....	....	....	....
Blackfoot " " 7	....	....	12	750	2	3	..	1	6	10	....	....	2	....
Blood " " 7	....	820	680	820	....	....	....	....	....	....	....	....	....	....
Peigan " " 7	....	....	78	....	2	2	....	....	....	....	....	....	....	....
Total	87	1,055	889	1,643	4	35	11	1	15	27	1	1	2	....

AGRICULTURAL AND INDUSTRIAL STATISTICS—*Continued.*

PROGRESS, SOURCES AND VALUE OF INCOME.

Agency.	Value of New Land Improvements.	Value of Buildings Erected.	Total Value of New Land Improvements and Buildings.	Value of Farm Products, including Hay.	Value of Beef Sold, also of that used for Food.	Wages Earned.	Received from Land Rentals.	The Estimated Value of Fish and Meat used for food is included in these Columns.		Earned by other Industries	Total Income of Indians.
								Earned by Fishing.	Earned by Hunting and Trapping.		
Saskatchewan.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Pelly Agency, Treaty No. 4	846 00	2,650 00	3,496 00	15,573 50	6,108 74	2,590 00	23,408 00	120 00	4,645 00	3,575 00	56,020 24
Assiniboine " " 4	630 00	300 00	930 00	5,557 70	859 60	625 00	.....	100 00	125 00	1,030 30	8,297 60
Moose Mountain " " 4	120 00	750 00	870 00	3,611 40	1,722 30	300 00	.....	500 00	600 00	2,787 60	9,521 30
Qu'Appelle " " 4	6,950 00	4,250 00	11,200 00	34,713 40	9,030 00	9,100 00	.....	2,300 00	2,950 00	13,846 60	71,940 00
Crooked Lakes " " 4	1,413 00	2,390 00	3,803 00	9,704 85	4,170 00	2,375 60	2,182 65	750 00	2,600 00	6,575 00	28,357 50
Touchwood Hills " " 4	1,340 00	760 00	2,100 00	14,437 15	7,626 29	6,932 25	13,835 00	1,000 00	15,596 00	7,401 65	66,828 34
Battleford " " 6	571 00	1,375 00	1,946 00	23,421 00	18,288 00	4,887 00	192 00	1,610 00	5,152 00	8,860 00	62,410 00
Carlton " " 6	833 50	2,395 00	3,223 50	6,194 15	6,042 20	10,251 95	.....	12,171 55	28,572 84	6,041 00	69,273 69
Duck Lake " " 6	7,757 00	6,075 00	13,732 00	9,291 55	9,051 00	12,721 34	.....	5,300 00	11,516 00	5,275 15	53,155 04
Onion Lake " " 6	252 00	400 00	652 00	13,519 00	9,517 00	7,575 00	.....	3,900 00	8,441 00	2,275 00	45,227 00
Total	20,612 50	21,345 00	41,957 50	136,023 70	72,415 13	57,357 54	39,617 65	27,751 55	80,107 84	57,667 30	471,030 71
Alberta.											
Edmonton Agency, Treaty No. 6	795 00	3,780 00	4,575 00	11,500 00	1,690 00	5,430 00	.....	390 00	2,900 00	8,700 00	30,610 00
Hobbema " " 6	.....	840 00	840 00	11,778 80	2,511 12	1,650 00	.....	2,700 00	2,770 00	2,250 00	23,659 92
Saddle Lake " " 6	450 00	.....	450 00	16,468 00	937 32	1,743 00	.....	2,450 00	4,579 00	1,233 00	27,410 32
Stony " " 7	.....	.....	.....	2,500 00	3,400 00	550 00	.....	.....	6,622 00	12,676 50	25,748 50
Sarcee " " 7	400 00	1,200 00	1,600 00	5,000 00	800 00	3,000 00	.....	.....	.....	200 00	9,000 00
Blackfoot " " 7	1,500 00	2,350 00	3,850 00	6,100 00	4,404 91	5,800 00	.....	150 00	600 00	19,800 00	36,854 91
Blood " " 7	4,100 00	.....	4,100 00	7,740 00	10,690 36	15,643 00	.....	.....	.....	5,410 00	39,483 36
Peigan " " 7	390 00	550 00	940 00	5,673 60	4,825 86	6,000 00	1,500 00	.....	.....	10,526 74	28,526 20
Total	7,635 00	8,720 00	16,355 00	66,760 40	29,259 57	39,816 00	1,500 00	5,690 00	17,471 00	60,796 24	221,293 21

INDIAN WOMEN WHO HAVE COMMUTED THEIR ANNUITY BY A TEN YEARS' PURCHASE ($50) UNDER SECTIONS 14-5 OF THE INDIAN ACT.

Commutations 1907-8.

Clandeboye Agency.

Margaret Lavalle, No. 473—St. Peter's Band.

Norway House Agency.

Mary Mason Shed, No. 273—Fisher River Band.
No. 354—Norway House Band.
No 50—Grand Rapids Band.

Pas Agency.

Mrs. Jos. Flett, No. 211—Pas Band.
No. 304— do

Portage la Prairie Agency.

Mrs. John Contois, No. 75—Fairford Band.
Annabella Campbell, No. 55—Waterhen River Band.
Margaret Munro, No. 89—Shoal River Band.

Birtle Agency.

Mrs. G. Chaboyer, née R. Morrisseau, No. 151—Gambler's Band.

Duck Lake Agency.

Maggie Burns, No. 79—James Smith's Band.

Pelly Agency.

Julia Ann Chartrand, No. 3—Key Band.

Qu'Appelle Agency.

Lily Voden, No. 36—Peepeekesis Band.

SESSIONAL PAPER No. 27

RETURN A (1) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

HEADQUARTERS—INSIDE SERVICE.

Name.	Rank.	Annual Salary.	Date of Present Rank.	Date of First Appointment to Civil Service.
		$		
Hon. Frank Oliver	Superintendent General		Holds this office combined with that of Minister of the Interior.	
Frank Pedley	Deputy Superintendent General	4,000	Nov. 21, 1902	Sept. 1, 1897
John D. McLean	Chief Clerk and Secretary	2,700	July 19, 1897	Oct. 1, 1876
Samuel Stewart	" Assistant Secretary	2,200	Dec. 30, 1898	Aug. 5, 1878
Duncan C. Scott	Chief Clerk and Accountant	2,500	July 6, 1893	Dec. 15, 1879
Fred'k H. Paget	" Assistant Accountant	2,050	July 1, 1904	June 1, 1882
Samuel Bray, D.L.S	" Chief Surveyor	2,000	July 1, 1905	June 14, 1884
William A. Orr	Chief Clerk, in charge of Land and Timber Branch	2,000	Feb. 6, 1906	Nov. 24, 1883
John McGirr	First Class Clerk	1,900	Oct. 14, 1891	Aug. 1, 1877
Alfred E. Kemp	"	1,700	Aug. 2, 1902	Feb. 1, 1884
Hiram McKay	"	1,600	July 1, 1905	July 9, 1880
James J. Campbell	"	1,550	May 10, 1906	Dec. 30, 1886
Henry C. Ross	"	1,550	Aug. 1, 1906	Jan. 10, 1883
Martin Benson	"	1,500	May 28, 1907	April 1, 1876
John D. Sutherland	Second Class Clerk	1,450	Jan. 11, 1899	Dec. 29, 1896
John W. Shore	"	1,450	July 1, 1899	Mar. 24, 1884
Geo. M. Matheson	"	1,450	Jan. 30, 1903	June 21, 1888
Robert B. E. Moffat	"	1,450	Jan. 30, 1903	Feb. 7, 1891
Joseph de Lisle	"	1,350	Feb. 1, 1905	June 23, 1880
Peter Joseph O'Connor	"	1,300	July 1, 1905	Feb. 15, 1898
Robert M. Ogilvie	" Architect	1,300	Aug. 25, 1905	Aug. 25, 1905
James Guthrie	"	1,250	May 10, 1906	July 21, 1891
Mary D. Maxwell	"	1,250	Aug. 1, 1906	May 31, 1890
Thos. P. Moffatt	"	1,250	Aug. 1, 1906	Oct. 14, 1891
Sidney Wm. Hobart	"	1,200	May 28, 1907	Jan. 2, 1900
Fannie Yeilding	Junior Second Class Clerk	1,100	July 1, 1900	April 3, 1882
Helen G. Ogilvy	" "	1,100	July 1, 1900	June 30, 1890
Floretta K. Maracle	" "	1,100	July 1, 1900	Jan. 31, 1891
Frederick R. Byshe	" "	1,100	July 1, 1900	Mar. 26, 1891
Herbert N. Awrey	" "	1,050	Jan. 21, 1902	Jan. 21, 1902
Alex. F. MacKenzie	" "	1,050	Nov. 13, 1902	Nov. 13, 1902
Geo. A. Conley	" "	1,050	Jan. 30, 1903	Jan. 30, 1903
Emma S. Martin	" "	1,000	July 1, 1900	Sept. 11, 1894
Chas. A. Cooke	" "	1,000	July 1, 1901	April 1, 1893
Sarah M. O'Gready	" "	1,000	July 1, 1901	Oct. 12, 1896
Wm. Edwin Allan	" "	1,000	July 15, 1901	July 15, 1901
Selwyn E. Sangster	" "	1,000	April 1, 1903	April 1, 1903
Helen M. O'Donahoe	" "	950	July 1, 1904	Jan. 2, 1901
David Morin	" "	950	July 1, 1904	July 1, 1901
John Ackland	" "	900	June 25, 1905	July 28, 1899
Margaret H. Brennan	" "	960	July 1, 1905	Nov. 19, 1896
Robert Pringle	"	850	April 20, 1906	April 20, 1906
Gertrude A. Gorrell	" "	850	May 10, 1906	May 26, 1899
Effie K. McLatchie	" "	850	Aug. 1, 1906	July 1, 1901
Henry Hooper	" "	850	Aug. 1, 1906	Aug. 1, 1906
Maud M. McIntosh	" "	800	July 1, 1907	July 31, 1905
Eva Alma Lord	" "	800	July 1, 1907	Nov. 29, 1905
Hugh M. Graham	" "	800	Jan. 1, 1908	Mar. 26, 1906
Ellen I. Findlay	Writer	600	Feb. 1, 1906	Feb. 1, 1906
Gertrude C. Neelin	"	600	Mar. 26, 1906	Mar. 26, 1906
Helen G. Russell	"	550	Aug. 1, 1906	Aug. 1, 1906
Lillie M. Whitten	"	550	Jan. 1, 1907	Jan. 1, 1907
Beatrice Phelan	"	550	Jan. 1, 1907	Jan. 1, 1907
Marianne T. Macgillis	"	500	Sept. 7, 1907	Sept. 7, 1907
Annie Agnes Doyle	"	500	Jan. 24, 1908	Jan. 24, 1908
Benjamin Hayter	Packer	700	July 26, 1892	Oct. 18, 1887
William Seale	Messenger	700	Mar. 18, 1893	Aug. 1, 1892
Fred Munro	"	650	Aug. 20, 1904	Aug. 20, 1904
McLeod S. McAllister	"	600	Oct. 10, 1905	Oct. 10, 1905
John Bradley	"	500	Jan. 1, 1908	Jan. 1, 1908

RETURN A (1) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OFFICERS OF OUTSIDE SERVICE AT HEADQUARTERS.

Name.	Rank.	Annual Salary.	Date of Present Rank.	Date of First Appointment to Civil Service.
		$		
Jas. Ansdell Macrae	Insp. of Indian Agencies and Reserves	1,800	Oct. 1, 1892	June 14, 1881
Geo. L. Chitty	Inspector of Timber	1,500	June 21, 1893	June 21, 1893
P. H. Bryce, M.D.	Medical Inspector	1,000	Feb. 1, 1904	Feb. 1, 1904
Henry Fabien	Draughtsman	1,200	Aug. 11, 1905	Aug. 11, 1905

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

ONTARIO.

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
		$ cts.		
Ramsden, J. G.	Inspector.	1,800 00	Toronto.	Treaty 9 and other agencies.
Cockburn, G. P.	Indian Agent.	1,800 00	Sturgeon Falls.	Nipissing, Dokis, French River, Temagaming, and Matachewan.
Ferguson, W. J. C.	Indian Land Agent.	200 00—Commission of 5 per cent on collections	Wiarton	Chippewas of Nawash, Cape Croker.
Fraser, John.	Timber Inspector.	1,200 00	Gore Bay	
Gibson, J. A.	Guardian of Islands.	25 00	Mallorytown.	Thousand Islands.
Goulette, O. V	"	150 00	Gananoque.	"
Hagan, Samuel.	Indian Agent.	500 00—$60 office rent.	Thessalon.	Thessalon, Mississagi River, Spanish River and Serpent River.
Hill, H. M.	Clerk, Indian Office.	600 00	Brantford.	
Hill, E. P.	"	300 00	"	
Jamieson, A.	Inspector of Works.	400 00	"	
Macdonald, D. F.	Indian Supt.	900 00—Commission of 5 per cent on collections; $60 office rent.	Parry Sound.	Parry Island, Hervey Inlet, Shawanaga and Watha (or Gibson).
McDonald, Alex. R.	Indian Agent.	500 00	Duart.	Moravians of the Thames.
McDougall, J. B.	"	500 00	Walpole Island	Chippewas and Pottawattamies of Walpole Island.
McDougall, Neil	"	800 00	Port Arthur.	Ojibbewas of Lake Superior, Western Division.
McFarlane, William	"	325 00	Keene.	Mississaguas of Mud and Rice Lakes.
McGibbon, Charles.	"	500 00	Penetanguishene	Chippewas of Beausoleil, Christian Island.
McIver, John.	"	500 00	McIver	" Nawash, Cape Croker.
McPhee, Duncan J.	"	400 00	Orillia.	" Rama.
Mullin, Martin.	"	60 00	Killaloe	Algonquins of Golden Lake.
Neilson, R. W.	Clerk, Indian Office.	720 00	Manitowaning.	
Nichols, W. L.	Indian Agent.	825 00—With $154.50 a year for office rent and fuel	Sault Ste. Marie.	Batchawana, Big Head or Michipicoten and Garden River.
Nisbet, William.	"	500 00	Sarnia.	Chippewas of Sarnia, Aux Sables and Kettle Point.
Scoffield, John.	"	600 00	Chippawa Hill	Chippewas of Saugeen.
Sims, C. L. D.	"	1,000 00	Manitowaning	Sucker Creek, Sucker Lake, Sheguiandah, South Bay, Maganatawan, Point Grondin, Tahgaiwinini, Whitefish River, Whitefish Lake and unceded portion of Manitoulin Island.

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

ONTARIO—*Concluded.*

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
		$ cts.		
Smith, G. J.	Indian Supt.	1,400 00 $140 for travelling expenses and $200 for rent	Brantford.	Six Nations of Grand River.
Stainton, J. R.	Indian Agent.	700 00	Deseronto	Mohawks of Bay of Quinte, Tyendinaga.
Sutherland, S.	"	600 00 Also $200 allowance for clerk	Delaware	Chippewas, Munsees and Oneidas of the Thames.
Thackeray, John	"	325 00	Roseneath	Mississaguas of Alnwick.
Thorburn, R.	"	800 00	Gore Bay	Chippewas of Cockburn Island, Sheshegwaning, Obidgewong and West Bay.
Van Loon, W. C.	"	600 00	Hagersville	Mississaguas of the Credit.
West, H. A.	"	500 00	Chapleau	Treaty No. 9 Indians.
Williams, Albert W.	"	100 00	Port Perry.	Misssissaguas of Scugog.
Yates, John	"	350 00	Sutton West	Chippewas of Snake and Georgina Islands.
Arthur, R. H., M.D.	Medical Officer	350 00 Paid by Band	Sudbury	Whitefish Lake Indians.
Blair, J. K., M.D.	"	125 00		Serpent River Indians.
Berry, J. D., M.D.	"	2 00 Per head (35 Inds.) $70 paid by band	Port Perry.	Mississaguas of Scugog.
Baxter, J., M.D.	"	300 00		Thessalon River and Mississagi River.
Carruthers, John, M.D.	"	600 00		Sheguiandah, Sucker Creek, West Bay and Whitefish River.
Flaherty, F. F., M.D.	"	175 00 Voted by Parliament	Massey	Spanish River Indians.
Hay, W. W., M.D.	"	500 00—Paid by Band.		Indians on Walpole Island.
Hayden, E. W., M.D.	"	275 00 "		Mississaguas of Alnwick.
Holmes, C. N., M.D.	"	2,850 00 $300 for drugs	Ohsweken	Six Nations.
Hough, H. A., M.D.	"	500 00 "	Wiarton	Chippewas of Nawash.
James, M., M.D.	"	200 00 Voted by Parliament	Mattawa	Algonquin Indians.
Johnston, J., M.D.	"	250 00—Paid by Band.		Indians on Manitouiin Island, Cockburn Island, Obidgewong and Sheshegwaning.
McCaig, A. S., M.D.	"	500 00 "		Garden River. Paid for attending Batchawana Bd.
McDonald, R., M.D.	"	350 00		Mississaguas of the Credit.
Mitchell, E. H., M.D.	"	300 00—Voted by Parliament		Oneidas of the Thames.
McGrady, J., M.D.	"	125 00—Paid by Band, $75, vote		Fort William, Pic Pays Plat and Red Rock Bds.
McLean, John, M.D.	"	300 00 " $50.		Chippewas of Rama.
McPhail, D. P., M.D.	"	300 00 "		Moraviars of the Thames.
McEwen, J. A., M.D.	"	260 00—Band, $200; $60 voted by Parliament		Chippewas and Munsees of the Thames.

McWilliams, V. H., M.D.	"	175 00 Paid by Band	...	Mississaguas of Rice Lake.
Pringle, H. H., M.D.	"	150 00 "	...	Chippewas of Snake Island.
Reeves, James, M.D.	"	200 00 Voted by Parliament	Eganville	Golden Lake Band.
Sheahan, J. J., M.D.	"	200 00 "	...	Indians from Pogamissing to White River.
Walker, C. W., M.D.	"	1,000 00 Paid by Band and Vote	...	Indians on Manitoulin Island.
Williams, R. W., M.D.	"	300 00 "	...	Chippewas of Saugeen.
Creegan, Rev. A. H.	Missionary (C.E.)	500 00 Paid by Band.	Deseronto	Mohawks of the Bay of Quinté.
Sims, H. S.	Constable	168 00 "	...	Serpent River and Spanish River.

QUEBEC.

Bastien, Antoine O.	Indian Agent	425 00	Jeune Lorette	Hurons of Lorette.
Beaulieu, E.	"	150 00 Commission of 5 p.c.	Cacouna	Amalecites of Cacouna.
Blain, Jean	"	600 00 $60 for office rent	Montreal	Iroquois of Caughnawaga.
Burwash Adam	"	350 00	N. Timiskaming	Lake Timiskaming and Abitibi.
Comiré, A. O., M.D.	"	400 00	St. François du Lac	Abenakis of St. Francis.
Dubé, J. R.	"	100 00	Becancour	" Becancour.
Gagnon, Adolphe	"	400 00	Bersimis	Bersimis.
Long, George	"	50 00 Commission of 10 p.c on land rent and 2½ p.c. on distribution	St. Regis	Iroquois of St. Regis.
McCaffrey, Wm. J.	Indian Agent	600 00 $50 office rent	River Desert	River Desert band, Maniwaki reserve.
Marcoux, A	"	400 00	Pointe Bleue	Montagnais of Lake St. John.
Morin, Rev. J. D.	"	200 00	Grand Cascapedia	Micmacs of Maria.
Perillard, Joseph	"	200 00	Oka	Lake of Two Mountains.
Pitre, Jeremie	"	300 00	Pointe la Garde	Micmacs of Restigouche.
Tremblay, J. E., M.D.	Indian Agent and Medical Officer	600 00	Esquimaux Point	North Shore St. Lawrence from Seven Islands to St.
Cote, C. H., M.D.	Medical Officer	200 00	Escoumains	Escoumains. [Augustine.
McCartney, F. W., M.D.	"	80 00 Voted by Parliament	...	Micmacs of Gaspé.
Mulligan, E. A., M.D.	"	200 00 Paid by Band	...	River Desert band, Maniwaki reserve.
Constantin, J., M.D.	"	500 00	Pointe Bleue	Pointe Bleue reserve.
Claveau, E. A., M.D.	"	200 00	Chicoutimi	Chicoutimi and vicinity.
Pelletier, J. A., M.D.	"	50 00	St. Urbain	St. Urbain, Charlevoix county.
Pinault, L. G., M.D.	"	200 00	Restigouche	
Ouimet, W., M.D.	"	400 00	Oka	
Arnaud, Rev. C.	Missionary (R.C.)	500 00	Quebec	Montagnais Indians, North Shore of the St. Law-
Bourget, Rev. P.	"	125 00 Also $25 for fuel	St. Regis	Iroquois of St. Regis. [rence.
DeGonzague, Rev. Jos.	"	235 00	Pierreville	Abenaquis of St. Francis.
Granger, Rev. L. S.	"	100 00	Caughnawaga	Iroquois of Caughnawaga.
Giroux, Rev. J. C.	"	425 00	Lorette	Hurons of Lorette.

NEW BRUNSWICK.

Farrell, James	Indian Agent	600 00 Allowed $50 for office rent	Fredericton	Tobique, Victoria Co.; Edmundston, Madawaska Co.; Kingsclear, St. Mary's, York Co.; Woodstock, Carleton Co.; Oromocto, Sunbury County.

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

NEW BRUNSWICK *Concluded.*

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
		$ cts.		
Irving, R. A.	Indian Agent	500 00	Buctouche	Eel River, Restigouche Co.; Bathurst, St. Peter's Island and Pockmouche, Gloucester Co.: Tabusintac, Burnt Church, Eel Ground, Red Bank, Indian Point, Big Hole and Renous, Northumberland Co., Big Cove, Indian Island and Buctouche, Kent Co.; Shediac and Fort Folly, Westmorland Co.
Desmond, J. F., M.D.	Medical Officer	200 00	Newcastle	Northumberland Co., Red Bank and Eel Ground
Duncan, G. M., M.D.	"	100 00	Bathurst Village	Gloucester Co., Bathurst reserve. [reserves.
Ferguson, A. G., M.D.	"	50 00	Dalhousie	Restigouche Co., Eel River reserve.
King, W. G., M.D.	"	40 00	Buctouche	Buctouche reserve, Kent Co.
Leger, J. A., M.D.	"	200 00	Shediac	Westmorland Co.
Earle, R. W. L., M.D.	"	400 00	Perth Centre	Tobique reserve.
McKenzie, J. B., M.D.	"	150 00	Chatham	Northumberland Co., Burnt Church reserve.
McAllister, D. H., M.D.	"	200 00	Sussex	King's Co.
McGrath, R. H., M.D.	"	150 00	Fredericton	St. Mary's, York Co.
McWilliams, L. J., M.D.	"	175 00	Rexton	Kent Co., Big Cove and Indian Islnnd reserves.
Peake, James, M.D.	"	125 00	Oromocto	
Ross, J. D., M.D.	"	200 00	Moncton	Westmorland Co.
Sprague, T. F., M.D.	"	100 00	Woodstock	
Weaver, W. J., M.D.	"	150 00	Fredericton	Kingsclear, York Co.
Bannon, Rev. E. J.	Missionary (R.C.)	100 00	Richibucto	Kent Co., Big Cove reserve.
D'Amour, Rev. L. C.	"	40 00	Edmundston	
Ryan, Rev. F. C.	"	100 00	Tobique	
Barnaby, Peter.	Constable	12 00	Newcastle	Northumberland Co., Eel Ground reserve.
Clare, A.	"	20 00	Rexton	Kent Co., Big Cove reserve.
Ellis, Joseph	"	180 00	Andover	Tobique reserve.
Swasson, Joseph	"	12 00	Church Point	Northumberland Co., Burnt Church reserve.
Ginish, Peter.	"	50 00	Newcastle	" Eel Ground reserve.
Tenas, James.	"	12 00	Burnt Church	" Burnt Church reserve.
Perley, Peter.	Caretaker of Church.	50 00	Tobique	

NOVA SCOTIA.

Boyd, A. J.	Inspector	1,500 00	River Bourgeois.	Inspector of Agencies, Maritime Provinces.

Beckwith, Chas. E	Indian Agent	50 00	Steam Mills	Micmacs of King's County.
Chisholm, Daniel	"	50 00	Sheet Harbour	" Halifax County.
Fraser, Rev. John	"	100 00	St. Peter's	" Richmond Co., Chapel Island reserve.
Harlow, Charles	"	100 00	Caledonia	" Lunenburg and Queen's Counties; Bridgewater, New Germany, Chester, Mahone Bay and Lunenburg.
Hipson, John	"	50 00	Shelburne	" Shelburne County.
Lacy, John	"	50 00	Annapolis	" Annapolis County, Maitland and Milford reserve.
Macdonald, Arch. J	"	100 00	Baddeck	" Victoria County.
McDonald, John R.	"	100 00	Heatherton	" Antigonish and Guysborough Counties; Afton, Pomquette Forks and Summerside reserves.
McIntyre, D. K., M.D	"	100 00	Sydney, C.B	Cape Breton County; Cariboo Marsh, Sydney re- and North Sydney.
McLeod, Rev. John D	"	100 00	New Glasgow	Micmacs of Pictou County; Indian Cove reserve.
McNeill, A. J., M.D	"	75 00	Grand Narrows	" Cape Breton Co., Eskasoni reserve.
MacPherson, Rev. Donald	"	100 00	Glendale	" Inverness County; Malagawatch and Whycocomagh reserves.
Purdy, J. H	"	50 00	Bear River	" Digby County; Indian Hill reserve.
Rand, Fred. A., M.D	"	50 00	Parrsboro	" Cumberland County; Franklin Manor reserve (Halfway river).
" "	"	200 00	"	" " "
Smith, R. H.	Indian Agent	50 00	Truro	Micmacs of Colchester County; Millbrook reserve.
Wallace, Alonzo	"	50 00	Shubenacadie	" Hants County; Indian Brook reserve.
Whalen, W. H.	"	50 00	Yarmouth	" Yarmouth County.
Bissett, C. P., M.D.	Medical Officer	175 00	St. Peters	Richmond County; Salmon River reserve.
Jacques, H., M.D	"	50 00	Canning	King's County.
Morse, G. R., M.D	"	50 00	Chester	Lunenburg County, East.
Macauley, J. A., M.D.	"	75 00		Inverness County, Malagawatch reserve.
MacDonald, Hugh N., M.D.	"	100 00	Whycocomagh	" Whycocomagh "
McDonald, D. M., M.D.	"	325 00	Badbeck	Victoria County.
McIntyre, D. K., M.D.	"	350 00	Sydney	Cape Breton County.
McDonald, W. H., M.D	"	200 00	Antigonish	Antigonish "
McLean, E. D., M.D.	"	150 00	Shubenacadie	Hants County; Indian Brook reserve.
McKenzie, J., M.D.	"	150 00	Pictou	Pictou County.
Marsh, H. A., M.D.	"	75 00	Bridgewater	Lunenburg County, West.
Miller, S. N., M.D.	"	50 00		Annapolis County.
Withers, Russell, M.D	"	50 00	Annapolis	" "
Yorston, F. S., M.D.	"	150 00	Truro	ColchesterCounty, Millbrook reserve.
Black, B., M.D	"	75 00		Hants County.
Smith, J. W., M.D	"	100 00	Liverpool	Queen's "
Lovitt, L. J., M.D.	"	250 00	Bear River	Digby "
Elderkin, E. J., M.D.	"	100 00	Weymouth	" "

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

PRINCE EDWARD ISLAND.

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
		$ cts.		
Arsenault, John O	Indian Superintend't	300 00	Higgins Road	Lennox Island reserve, Richmond Bay; Morell reserve, King's County.

BRITISH COLUMBIA.

Vowell, Arthur W	Indian Supt. and Reserve Com. for B.C.	3,200 00	Victoria	
MacLaughlin, W	Senior Clerk	1,900 00	"	
Stevens, W. A	Clerk	1,500 00	Victoria	
Dalby, H. G	"	840 00	"	
Cameron, A. L	"	600 00	"	
McLachlan, D	Messenger	720 00	"	
Bell, Ewen	Indian Agent	1,200 00	Clinton	Williams Lake Agency.
Cox, G. D	"	600 00	Telegraph Creek	Cassiar "
Galbraith, Robert L. T.	"	1,200 00	Steele	Kootenay "
Halliday, W. M	"	1,200 00	Alert Bay	Kwawkewlth "
Irwin, Archibald	"	1,200 00	Kamloops	Kamloops-Okanagan Agency.
Lorenz, Ernest	"	1,800 00	Metlakatla	Northwest Coast. "
Loring, Richard E	"	1,200 00	Hazelton	Babine "
McDonald, R. C	"	1,200 00	New Westminster	Fraser River "
Neill, Alan W	"	1,200 00	Alberni	West Coast "
Robertson, W. R	"	1,200 00	Duncan's Station	Cowichan "
Cumming, W. G., M.D	Medical Officer	240 00	Saanich	" "
Sanson, G., M.D	"	420 00	Ashcroft	Kamloops "
Dykes, Watson, M.D	"	400 00	Cowichan	Cowichan "
Drysdale, W. F., M.D	"	500 00	Nanaimo	" "
Elliott, R., M.D	"	300 00	Windermere	Kootenay "
Millard, H. P., M.D	"	240 00	Comox	Cowichan "
Large, R. W., M.D	"	600 00	Bella Bella	Northwest Coast "
Kergin, W. T., M.D	"	1,080 00	Port Simpson	" "
Jones, O. M., M.D	"	500 00	Victoria	Indians generally
Wilson, T. A., M.D	"	600 00	Port Essington	"

McLean, Charles, M.D.	"	780 00	Ucluelet	West Coast Agency.
Morgan, A. D., M.D.	"	420 00	Alberni	" "
Watt, Hugh, M.D.	"	600 00	Steele	Kootenay "
Wrinch, H. C., M.D.	"	660 00	Hazelton	Babine "
Keller, H. L. A., M.D.	"	300 00	Kilowna	Kamloops "
Williams, G., M.D.	"	300 00	Vernon	" "
White, R. B., M.D.	"	420 00	Fairview	" "
Wade, M. S., M.D.	"	780 00	Kamloops	" "
Offerhaus, E. J., M.D.	"	210 00	Spallumcheen	" "
Tatill, G. W., M.D.	"	480 00	Nicola	" "
Bryden-Jack, W. D., M.D.	"	1,200 00	Vancouver	Fraser "
Elliott, C. A., M.D.	"	750 00	Harrison	" "
Drs. Drew & Hall	"	1,200 00	New Westminster	" "
Henderson, J. C., M.D.	"	400 00		" "
Whillans, H. A., M.D.	"	180 00	Hedley City	Kamloops "
Rogers, H. B., M.D.	"	300 00	Chemainus	Cowichan "
Inglis, F., M.D.	"	300 00	Telegraph Creek	
Greer, R. F., M.D.	"	500 00	Stevenston	Fraser "
King, A. A., M.D.	"	300 00	Ladner	" "
Stuart, A. J., M.D.	"	500 00	Mission City	" "
McDonald, D. J., M.D.	"	720 00	Kincolith	Northwest Coast Agency.
Belch, A., M.D.	"	300 00	Quesnel	Williams Lake "
Boyd, C. A., M.D.	"	1,000 00	150 Mile House	" "
Green, A. E.	Inspector of Indian Schools	1,100 00	Vancouver	
McDonald, N.	Clerk	600 00	New Westminster	Fraser Agency.
O'Connell, Thomas	Constable	1,000 00	Nanaimo	
Berryman, H.	"	900 00	Port Essington	

MANITOBA, KEEWATIN, SASKATCHEWAN AND ALBERTA.

	INDIAN COMMISSIONER'S OFFICE.			
Laird, Hon. David	Indian Commissioner	3,200 00	Winnipeg, Man.	
McKenna, J. A. J.	Asst. Indian Comm'r and Chief Inspect.	2,600 00	" "	
Jean, E.	Secy. to Commiss'r	1,400 00	" "	
Reid, J. Lestock, sr.	Surveyor in charge of Indian reserve surveys in Alberta, Saskatchewan, Manitoba, Keewatin and part of Ontario.	1,800 00	Ottawa	
McLean, J. K.	Asst. Surveyor	1,800 00	"	
Betournay, Geo. A., M.A.	Clerk	1,400 00	Winnipeg, Man.	
Richardson, H.	"	1,200 00	" "	

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

MANITOBA, KEEWATIN, SASKATCHEWAN AND ALBERTA—*Continued.*

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
		$ cts.		
Robson, E.	Stenographer and Typewriter	790 00	Winnipeg, Man.	
Gordon, M.	Typewriter	710 00	" "	
Ivey, W.	Clerk	550 00	" "	
Fewtrell, E. L.	Caretaker	144 00	" "	
	TREATY NO. 8.			
Conroy H. A.	Inspector	2,200 00	Ottawa	
	LAKE WINNIPEG INSPECTORATE.			
Semmens, Rev. John	Inspector of Indian Agencies and reserves	2,000 00	Stonewall, Man.	Clandeboye, Berens River, Kenora, Savanne and Fort Frances agencies.
	LAKE MANITOBA INSPECTORATE.			
Swinford, S.	Inspector of Indian Agencies and Reserves	2,000 00	Portage la Prairie, Man	Portage la Prairie, Manitowapah, the Pas and Birtle agencies.
Campbell, M.	Farmer	400 00	Swan Lake, Man.	
Ginn, J. C.	"	300 00	Dominion City, Man.	
Telfer, J. S.	Caretaker	40 00	Portage la Prairie, Man	
	TREATY NO. 2.			
Logan, Robt.	Indian Agent	1,100 00	Portage la Prairie, Man	Manitowapah agency : Sandy Bay, Lake Manitoba, Ebb and Flow Lake, Fairford, Sandy Bay (Treaty No. 2), Lake St. Martin, Crane River, Waterhen River and Pine Creek reserves.

Tucker, Geo	Issuer	40 00	Indian Ford, Man	
	TREATY NO. 3.			
Wright, J. P	Indian Agent	1,200 00	Fort Frances, Ont	Fort Frances agency: Hungry Hall, Long Sault, Manitou, Little Forks, Couchiching, Stangecoming, Niacatchewenin, Nickickousemenecaning, Seine River and Lac la Croix.
Lyons, J. H	Interpreter	420 00	" "	
McKenzie, R. S	Indian Agent	1,200 00	Kenora, Ont	Kenora and Savanne agencies.
	TREATY NO. 5.			
Fischer, Fred	Indian Agent	1,000 00	The Pas, Sask	The Pas agency: Grand Rapids (Saskatchewan River), Chemawawin, Moose Lake, the Pas, Pas Mountain, Cumberland.
Cochrane, Louis	Interpreter	480 00	" "	
Calverley, C. C.	Indian Agent	1,000 00	Norway House Keewatin District	Norway House agency.
Crate, W. H. G	Interpreter	480 00	Norway House	
Lewis, J. O	Indian Agent	1,100 00	Selkirk, Man	Clandeboye Agency: St. Peter's, Brokenhead, Fort Alexander.
Sutherland, P. H	Clerk	520 00	" "	
	SOUTH SASKATCHEWAN INSPECTORATE.			
	TREATY NO 4.			
Graham, W. M	Inspector of Indian Agencies and Reserves	2,300 00	Balcarres, Sask	Pelly, Moose Mountain, Crooked Lake, Assiniboine, Qu'Appelle and Touchwood agencies.
Godfrey, T. P	Clerk, " "	720 00	" "	
	ALBERTA INSPECTORATE.			
	TREATY NO. 7 AND PART TREATY NO. 6.			
Markle, J. A	Inspector of Indian Agencies and Reserves	2,000 00	Gleichen, Alta	Edmonton, Hobbema, Stony, Sarcee, Blackfoot, Blood and Peigan agencies.

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

MANITOBA KEEWATIN, SASKATCHEWAN AND ALBERTA—*Continued.*

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
		$ cts.		
	NORTH SASKATCHEWAN INSPECTORATE.			
	TREATY NO. 6.			
Chisholm, Wm. J	Inspector of Indian Agencies and Reserves	2,000 00	Prince Albert, Sask	Duck Lake, Carlton, Battleford, Onion Lake, Saddle Lake agencies, and White Cap Sioux, Montreal Lake and lac la Ronge reserves.
Sinclair, C	Teamster and Interpreter	360 00	"	
	Assiniboine Agency.			
Grant, W. S	Indian Agent	1,100 00	Sintaluta, Sask	Assiniboine reserve.
Hassen, Jas	Farmer	500 00	"	
Grant, W. R	Clerk	600 00	"	
	Battleford Agency.			
Day, J. P. G	Indian Agent	1,100 00	Battleford, Sask	Red Pheasant's, Stony, Sweet Grass, Poundmaker's, Little Pine's, Moosomin's, and Thunderchild's, reserves.
Johnson, C. J	Clerk	720 00	"	
Vilbrun, D	Farmer	480 00	"	
Forest, J. O	"	480 00	"	
Suffern, A	"	480 00	"	
Jefferson, R	"	600 00	"	
McKay, W	Tinster & Interpreter	360 00	"	
Trim, T. A	Blacksmith	600 00	"	
Murphy, F	Farmer	480 00	"	
Morin, P. C	Overseer	240 00	"	Meadow Lake.
	Birtle Agency.			
Wheatley, G. H	Indian Agent	1,200 00	Birtle, Man.	Birdtail, Oak River, Oak Lake, Turtle Mountain, Keeseekoowenin, Waywayseecappo, Valley River, Gambler's and Rolling River.
Cornes, T. J	Teamster	480 00	"	

	Griswold Agency.			
Hollies, J. H.	Actg. Agent	900 00	Griswold, Man.	Sioux Reserves.
Indian	Constable	60 00	"	
"	Interpreter	420 00	"	
	Blackfoot Agency.			
Gooderham, J. H.	Indian Agent	1,200 00	Gleichen, Alta.	Blackfoot Indians.
Dickinson, S. M.	Clerk and Issuer	900 00	"	
Brereton, D. L.	Farmer	600 00	"	
Jones, A. E.	"	600 00	"	
Mayfield, W.	Interpreter	260 00	"	
Calfchild, Jos.	Asst. Farmer	240 00	"	
	Blood Agency.			
Wilson, R. N.	Indian Agent	1,300 00	Macleod, Alta.	Blood Indians.
Jowett, J. W.	Clerk	900 00	"	
Clark, C. H.	Stockman & Farmer	600 00	"	
Winder, G. D.	" "	600 00	"	
Hillier, E. G.	" "	600 00	"	
Ely, Joe.	Mail Carrier	180 00	"	
Webb, J. A.	Issuer	600 00	"	
Bullshield, Joe.	Interpreter	420 00	"	
Sister St. Eusèbe	Hospital Matron	180 00	"	
" Brannigan	" Nurse	120 00	"	
" Girard	" "	120 00	"	
	Carlton Agency.			
Borthwick, T.	Indian Agent	1,100 00	Mistawasis, Sask.	Wm. Twatt's, Petequakey's, Mistawasis, Ahtakakoop's, Kapahawekenum's, Kenemotayo's, Pelican Lake and Wahspaton Sioux reserves.
Jackson, T. E.	Clerk	780 00	"	
McKenzie, John	Miller	720 00	"	
Campbell, A. G.	Farmer	480 00	"	
Dreaver, Jno.	Interpreter	360 00	"	Kenemotayo's reserve.
Dreaver, J., sr.	Farmer	480 00	"	Big River reserve.
Settee, J. R.	Overseer	60 00	Prince Albert, Sask.	Montreal Lake.
Woods, F.	Labourer	300 00	Mistawasis, Sask.	Mistawasis.
Isbester, G. B.	Farmer	480 00	"	Ahtakakoop's reserve.
Beverley, J.	"	300 00	Prince Albert, Sask.	Wahspaton Sioux reserve.
	Crooked Lake Agency.			
Millar, M.	Indian Agent	1,400 00	Broadview, Sask.	Ochapowace's, Kakewistahaw's, Cowessess and Sakimay's reserves.
Sutherland, J. A.	Miller & Blacksmith	660 00	"	
Smith, I.	Farmer	600 00	"	
Hourie, Peter	Interpreter	480 00	"	
Cameron, Henry	Teamster	480 00	"	
Saywell, G. F.	Clerk	600 00	"	
Geo. A. Sutherland	Farmer	480 00	"	
Thornton, L. E.	"	600 00	"	

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

MANITOBA, KEEWATIN, SASKATCHEWAN AND ALBERTA—*Continued.*

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
	Duck Dake Agency.	$ cts.		
Macarthur, Jas	Indian Agent	1,100 00	Duck Lake, Sask	One Arrow, Okemassis, Beardy's, Checastapasin's John Smith's, James Smith's and Cumberland reserves.
Price, Jos. H	Clerk and Farmer	720 00	"	
Marion, Louis	Farmer	480 00	"	
Campbell, P	"	480 00	"	John Smith's.
Gardapie, H	Interpreter	360 00	"	
McLoy, J	Farmer	480 00	"	Jas. Smith's.
Hamilton, P. J	"	800 00	Melford, Sask	Kinistino's reserve.
	Edmonton Agency.			
Verreau, Urbain	Indian Agent	1,000 00	Edmonton, Alta	Enoch's, Alexander's, Joseph, White Whale Lake and Paul's reserves.
Black, W	Clerk	720 00	"	
Hope, H	Farmer	480 00	"	
Foley, John	Interpreter	500 00	"	
Pattison, A. E	Farmer	540 00	"	
	Hobbema Agency.			
Mann, G. G	Indian Agent	1,200 00	Ponoka, Alta	Samson's, Ermineskin's and Louis Bull's bands.
Mann, B. M	Clerk	360 00	"	
Perry, A. W	Farmer	600 00	"	
Lucas, T. W	"	600 00	"	
Gardner, W	Teamster & Int'rpr't'r	420 00	"	
Indian	Miller & Teamster	120 00	"	
"	Mail Carrier	120 00	"	
Ferguson, Geo	Blacksmith	600 00	"	
	Moose Mountain Agency.			
Cory, Thos	Indian Agent	900 00	Carlyle, Sask	Pheasant Rump's, Striped Blanket's and White Bear's reserves.
Williams, E. O	Farmer	480 00	"	
Miller, F. C.	Clerk	600 00	"	

	Onion Lake Agency.			
Sibbald, W.	Indian Agent	1,100 00	Onion Lake, Sask.	Seekaskootch and Chipewyan No. 124, reserves.
Slater, T. J.	Farmer	480 00	"	
Taylor, Joseph	Engineer	480 00	"	
Turner, L. E.	Clerk	660 00	"	
Bangs, John	Interpreter	360 00	"	
	Peigan Agency.			
Yeomans, E. H.	Indian Agent	1,000 00	Macleod, Alta	Peigan Indians.
Race, G. H.	Clerk and Issuer	780 00	"	
McKenzie W.	Stockman	600 00	"	
Indian	Interpreter	360 00	"	
"	Mail Carrier	120 00		
	Pelly Agency.			
Blewett, W. G.	Indian Agent	1,000 00	Kamsack, Sask.	Côté, Key's and Keeseekoose reserves.
Crawford, A. A.	Clerk	600 00	"	" " "
Brigham, A. F.	Farmer	480 00	"	" " "
Singoosh, John	Labourer	360 00	"	Key's reserve.
Chard, J. G.	Overseer	600 00	"	Valley River.
Kinnaar, M.	Farmer	480 00	"	Côté's reserve.
	Qu'Appelle Agency.			
Nichol, H.	Indian Agent	900 00	Balcarres, Sask.	Little Black Bear's, Star Blanket's, Okanase, Peepeekeesis, Piapot's Muscowpetung's, Pasquah's and Standing Buffalo's reserves.
Tye, A. W.	Clerk	540 00	"	
Moore, J.	Interpreter	420 00	"	
North, H.	Stockman	420 00	"	
Davidson, W. F	Farmer	600 00		
Fraser, P.	"	480 00	"	
A. H. Miles	"	720 00	"	
Muirhead, A.	"	480 00	"	
Indian	Mail Carrier	96 00	"	
	Saddle Lake Agency.			
Batty, J.	Indian Agent	1,000 00	Saddle Lake, Alta.	Saddle Lake, Wahsatanow, Whitefish Lake, Lac la Biche Chipewyan No. 130 and Beaver Lake reserves.
Smith, U.	Farmer	540 00	"	
H. T. Niblock	"	600 00	"	
Whitford, S.	Interpreter	540 00	"	
Carroll, I. W.	Clerk	360 00	"	
Erasmus, P.	Asst. Farmer	420 00	"	
Hall, Miss E.	Nurse	720 00	"	
Whitford, Miss M.	Asst. Nurse	120 00	"	
Indian	Hospital Asst	240 00	"	

RETURN A (2) of Officers and Employees of the Department of Indian Affairs on April 1, 1908.

OUTSIDE SERVICE.

MANITOBA, KEEWATIN, SASKATCHEWAN AND ALBERTA—*Concluded.*

Name.	Office.	Annual Salary, &c.	Address.	Bands or Reserves in Agency.
	Sarcee Agency.	$ cts.		
McNeill, Alex. J.	Indian Agent	1,200 00	Calgary, Alta.	Sarcee reserve.
Hodgson, George	Interpreter	600 00	"	
Indian	Scout	120 00	"	
Onespot, John	Stockman	360 00	"	
Indians (3)	Herders	540 00	"	
	Stony Agency.			
Fleetham, T. J.	Indian Agent	1,200 00	Morley, Alta.	Stony reserve.
Gordon, W.	Clerk	900 00	"	"
Schmidt, E.	Interpreter	480 00	"	"
Christianson, S.	Labourer, Hospital	420 00	"	"
Gibson, R.	Cook "	300 00	"	"
Grant, John	Stockman	600 00	"	"
	Touchwood Hills Agency.			
Murison, W.	Indian Agent	1,200 00	Kutawa, Sask.	Muscowequan's, George Gordon's, Day Star's, Poor Man's, and Fishing Lake.
Stanley, E.	Clerk	760 00	"	
Robinson, W. B. H.	Farmer	600 00	"	
Pratt, Chas. T.	Teamster	420 00	"	
Nolan, R.	Farmer	480 00	"	
Anderson, W. P.	"	480 00	"	
Field, Sep.	"	480 00	"	
	Medical Officers.			
Grant, W. J., M.D.	Medical Officer	1,800 00	Norway House	Norway House.
Hanson, Thos., M.D.	"	1,000 00	Kenora	Kenora agency.
Moore, Robert, M.D.	"	450 00	Fort Frances, Ont.	Fort Frances agency.
Steep, J. R., M.D.	"	900 00	Winnipeg, Man.	Clandeboye agency.
Grant, C. C., M.D.	"	480 00	Red Deer, Alta.	Red Deer industrial school.
Edwards, O.C., M.D.	"	1,800 00	Macleod, Alta.	Blood and Peigan reserves.
Fraser, M. S., M.D.	"	480 00	Brandon, Man.	Brandon industrial school.

Goodwin, R., M.D.	"	350 00	Elkhorn, Man.	Elkhorn industrial school.
Lafferty, J. D., M.D.	"	1,800 00	Calgary, Alta.	Blackfoot, Sarcee and Stony agencies, and High River and Calgary industrial schools.
Macadam, S.T., M.D.	"	900 00	Battleford, Sask	Battleford agency and industrial school.
Monteith, R. E., M.D.	"	600 00	Lebret, Sask	Qu'Appelle industrial school.
Bird, James R., M.D.	"	600 00	Whitewood, Sask.	Crooked Lake agency.
Matheson, E., M.D.	"	180 00	Onion Lake, Sask.	Onion Lake agency.
Labrecque, J. J. A., M.D.	"	150 00	Prince Albert, Sask.	Emmanuel College.
Thomson, A. W., M.D.	"	500 00	Regina, Sask.	Regina industrial school.
Reid, J. L., M.D.	"	600 00	Prince Albert, Sask.	John Smith's Sioux, Sturgeon Lake, W. Charles & Jas. Roberts reserves.
Beer, F. L., M.D.	"	300 00	Carlyle, Sask.	Moose Mountain agency.
Des Rues, Gauthier, M.D.	"	500 00	Duck Lake, Sask.	Boarding school and reserves.
Larose, A., M.D.	"	900 00	The Pas, Sask	Pas agency reserves.
Giroux, A., M.D.	"	200 00	St. Albert, Alta.	St. Albert boarding school, Edmonton agency.
Drs. Turnbull & McCulloch	"	250 00	Moosejaw, Sask.	Moosejaw Sioux.
Donald, W. B. L., M.D.	"	1,500 00	Lesser Slave Lake, Alta	Treaty 8.
Wallace, J. J., M.D.	"	500 00	Kamsack, Sask.	Pelly agency.
Bourgeault, V., M.D.	"	500 00	Marcelin, Sask.	Carlton agency.
Stuart, W. A., M.D.	"	480 00	Kinistino, Sask.	James Smith's reserve.

APPROPRIATION ACCOUNTS.

1907-8.

Votes.	Grants.	Expenditure	Grant not used.	Grant exceeded.
MANITOBA AND NORTHWEST PROVINCES AND TERRITORIES.	$ cts.	$ cts.	$ cts.	$ cts.
Annuities and commutations	153,822 00	148,787 00	5,035 00	
Implements, tools, hardware	4,708 00	4,663 91	44 09	
Field and garden seeds	1,721 00	1,702 72	18 28	
Live stock	10,000 00	9,998 41	1 59	
Supplies for destitute	143,068 00	143,034 41	34 59	
Triennial clothing	2,432 00	2,363 68	68 32	
Day, boarding and industrial schools	303,875 00	271,345 54	32,509 46	
Surveys	11,560 00	11,416 39	83 61	
Sioux	7,720 00	7,689 35	30 65	
Grist and saw-mills	1,011 00	992 74	18 26	
General expenses	218,675 50	215,550 99	3,124 51	
	858,532 50	817,564 14	40,968 36	
INDIANS OF YUKON DISTRICT.				
Supplies for destitute	9,000 00	8,807 54	192 46	
Day and boarding schools	5,000 00	3,279 85	1,720 15	
	14,000 00	12,087 39	1,912 61	
BRITISH COLUMBIA.				
Salaries	25,360 00	24,185 66	1,174 34	
Relief	14,500 00	11,271 16	3,228 84	
Implements and seed	1,000 00	352 00	684 00	
Medical attendance and medicines	23,000 00	23,206 15		206 15
Day schools	17,650 00	11,796 53	5,853 47	
Industrial and boarding schools	83,500 00	74,086 83	9,413 17	
Travelling expenses	7,000 00	6,839 14	160 86	
Office, miscellaneous hospital, cleaning Indian orchards, boat for N. W. coast agency, &c.	30,070 00	19,001 97	11,068 03	
Indian surveys and reserve commission	2,500 00	2,948 96		448 96
	204,580 00	173,688 40	31,546 71	655 11
ONTARIO AND QUEBEC.				
Relief, medical attendance and medicines, Quebec	11,000 00	10,046 03	953 97	
" " " Ontario	14,500 00	12,522 84	1,977 16	
Blankets and clothing	500 00	509 69		9 69
Salaries of chiefs, Cape Croker and Gibson, and agent at Oka	150 00	112 50	37 50	
Schools, Ontario, Quebec and Maritime Provinces	67,900 00	67,733 10	166 90	
Payment Robinson Treaty annuity	12,450 00	12,450 00		
Survey of Indian reserves	7,000 00	5,715 06	1,284 94	
Indian Land Management Fund	10,000 00	10,000 00		
Grant Agricultural Society Munsees of the Thames	90 00	90 00		
General legal expenses	13,500 00	1,093 95	12,406 05	
Annuity, gratuity, expenses Treaty 9	20,000 00	13,621 69	6,378 31	
Ditching reserves	400 00	280 00	120 00	
To restore funds Mississaguas of the Credit	38,102 10	38,102 10		
Total	195,592 10	172,276 96	23,324 83	9 69

APPROPRIATION ACCOUNTS—*Concluded.*

1907-8.

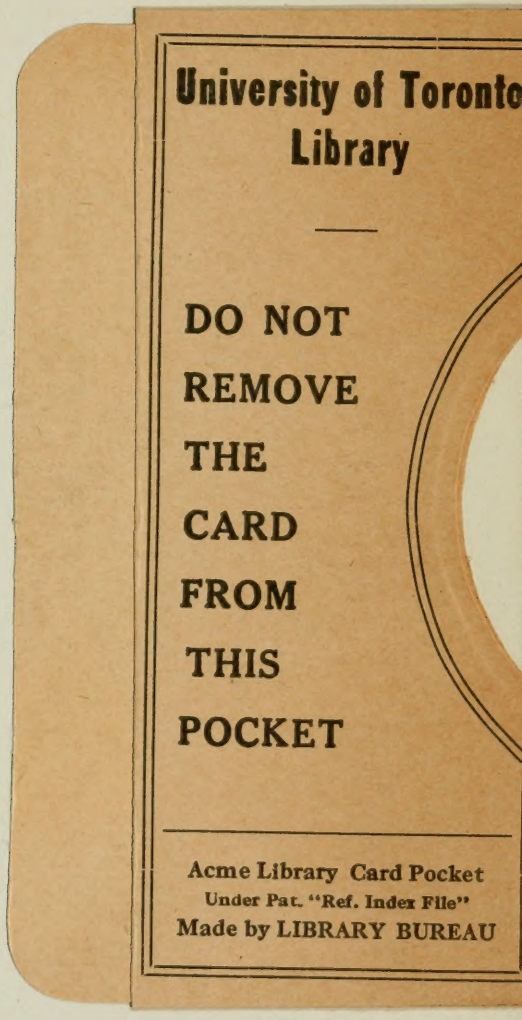
Votes.	Grants.	Expenditure	Grant not used.	Grant exceeded.
Nova Scotia.	$ cts.	$ cts.	$ cts.	$ cts.
Salaries	1,275 00	1,275 00		
Relief and seed grain	3,900 00	4,002 27		102 27
Medical attendance and medicines	5,000 00	4,994 23	5 77	
Miscellaneous	300 00	231 85	68 15	
Grant for repairs to roads and wharf	700 00	659 21	40 79	
To purchase wooded lands for Indians at Colchester and Pictou Co.	1,300 00	1,300 00		
	12,475 00	12,462 56	114 71	102 27
New Brunswick.				
Salaries	1,408 00	1,370 55	37 45	
Relief and seed-grain	2,500 00	3,122 26		622 26
Medical attendance and medicines	4,000 00	3,504 63	495 37	
Miscellaneous	600 00	420 76	179 24	
Purchase wood land Eel River, Restigouche Co.	750 00		750 00	
	9,258 00	8,418 20	1,462 06	622 26
Prince Edward Island.				
Salaries	300 00	300 00		
Relief and seed-grain	925 00	763 23	161 77	
Medical attendance and medicines	650 00	873 15		223 15
Miscellaneous, &c.	75 00	8 22	66 78	
Erection wharf and scow, Lennox Island	800 00	209 50	590 50	
	2,750 00	2,154 10	819 05	223 15
General.				
Salaries of inspectors	4,300 00	4,300 00		
Salary and expenses for Indian Supt., N.S.	2,000 00	1,600 53	399 47	
Travelling expenses and clerical assistance	2,200 00	1,229 12	970 88	
Printing and stationery	11,000 00	10,036 36	963 64	
Payment to Indians surrendering their lands	50,000 00	49,996 01	3 99	
Salary of inspector for Manitoulin Island and N. S. of Lake Superior and Georgian Bay	1,200 00	1,200 00		
Destitute Indians in remote districts	10,000 00	9,949 95	50 05	
	80,700 00	78,311 97	2,388 03	

INDIAN TRUST FUND.

RETURN C, showing transactions in connection with the Fund during the year ended March 31, 1908.

Service.	Debit.	Credit.
	$ cts.	$ cts.
Balance, March 31, 1907		5,157,566 59
Collections on land sales; timber and stone dues; rents, fines and fees		251,523 16
Interest for year ended March 31, 1908, on above balance		199,339 64
Legislative grants to supplement the funds		66,059 54
Outstanding cheques for 1905-6		83 03
Expenditure during the year 1907-8	493,481 55	
Balance, March 31, 1908	5,181,090 41	
	5,674,571 96	5,674,571 96

For further details of the above expenditure from the Indian Trust Fund and the Consolidated Fund, see Part I of the Auditor General's Report.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